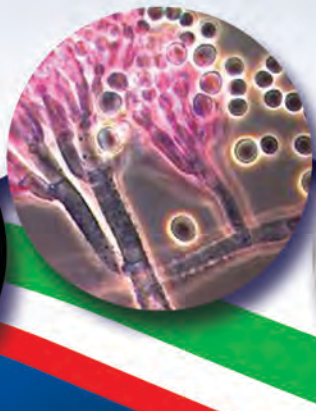

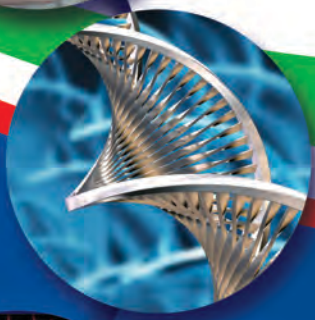
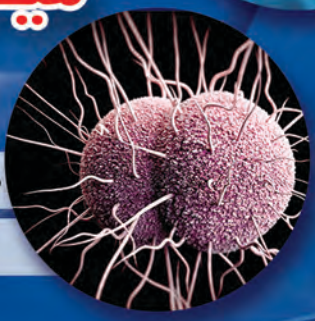

# هجدهمین کنگره بین المللی میکروب شناسی ایران

بزرگداشت مقام علمی و اخلاقی دکتر علیرضا امیری قراگزلو

دانشکده پزشکی، دانشگاه علوم پزشکی تهران

۷ الی ۹ شهریور ماه ۱۳۹۶، تهران، ایران

# 18th International & Iranian Congress of Microbiology

August 2017 29-31

School of Medicine, Tehran University of Medical Sciences

دانشگاه علوم پزشکی ایلام

**یا من اسمهُ دواء و ذکرهُ شفاء**

# هجدهمین کنگره بین المللی میکروب شناسی ایران

دانشکده پزشکی، دانشگاه علوم پزشکی تهران
۷ الی ۹ شهریورماه ۱۳۹۶، تهران، ایران

محور کنگره:

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هجدهمین کنگره بین‌المللی

# میکروب شناسی ایران

دانشکده پزشکی، دانشگاه علوم پزشکی تهران

۷ الی ۹ شهریور ماه ۱۳۹۶، تهران، ایران

## 18th International & Iranian

# Congress of Microbiology

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| | | |
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# هجدهمین کنگره بین‌المللی میکروب شناسی ایران


به کوشش : محمد رضا آشتیانی

امور اجرایی و بازرگانی : حمید رضا اسکندری

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# پیام رییس و دبیر علمی کنگره

**همکاران گرامی، دانشجویان عزیز**

امسال نیز همچون کنگره های قبلی تلاش شد تا فضای علمی حاکم برکنگره از شور و شعف علمی برخوردار باشد و امکان تبادل نظر و تجارب را بین همکاران رشته‌ها مختلف و مرتبط با میکروب‌شناسی فراهم نماید. حضورگسترده اساتید و محققین کشورمان در این مجمع علمی بی‌شک مهم‌ترین علت بالا بودن سطح علمی کنگره بوده است. همچنین تداوم شرکت اساتید بین‌المللی بویژه از کشورهای اروپا نقش بسزائی در معرفی هر چه بهتر جامعه میکروب‌شناسی کشورمان در جهان و نیز اعتبار بخشی به یکی از قوی‌ترین انجمن های علمی میکروب‌شناسی در منطقه داشته است. علیرغم تلاش‌های صورت گرفته و موفقیت‌های کسب شده، فاصله زیادی بین واقعیت‌های موجود و استانداردهای مورد نیاز در مراکز تشخیصی و درمانی کشور وجود دارد. بیماری‌های عفونی و مرگ و میر ناشی از آن مهم‌ترین چالش پیش رو در مقابل کلیه متخصصین بالینی در کشورهای مختلف و از جمله کشورمان می‌باشد. این مسئله ضرورت بازنگری مدیران درمانی کشور و پرداختن بیشتر به موضوع میکروب شناسی و تقویت آن را در بخش‌های بالینی نمایان می‌سازد. به همین منظور متخصصین مختلف آراء و نظرات علمی خود را در خصوص مدیریت بحران و ضرورت بررسی ریشه ای موضوع و راههای پیشگیری از عفونت و مرگ و میر از نقطه نظر میکروب شناسی در این همایش ارائه خواهند نمود. در هجدهمین کنگره یاد همکاران عزیز سفر کرده از عالم خاکی زنده یاد استاد علیرضا امیری قراگزلو از بنیانگذاران انجمن میکروب شناسی ایران و دکتر بهمن تبرائی از اعضاء هیئت مدیره دوره‌های قبل را گرامی خواهیم داشت.

در پایان فرصت را مغتنم شمرده و مقدم جنابعالی را در هجدهمین کنگره بین‌المللی میکروب‌شناسی ایران گرامی داشته و ضمن تشکر از مشارکت شما در برپایی این همایش بابت کاستی‌های احتمالی آن پیشاپیش عذرخواهی می نماییم.

**دکتر محمد مهدی فیض آبادی**
**رییس کنگره**

**دکتر عباسعلی ایمانی فولادی**
**دبیر علمی کنگره**

# Message from the Chairman and Scientific Secretary of the Congress

**Dear Colleagues, Dear Students**

This year, like the previous Congresses, we have tried to create a scientific atmosphere during the meeting full of passion for science and give the opportunity to exchange the ideas and experiences among colleagues from various fields related to the microbiology. The extensive presence of the professors and scholars of our country at this scientific meeting is undoubtedly the most important reason for the high scientific level of the Congress. In addition, the continuous participation of the international professors, especially from the European countries, has also played a significant role in introducing the best of our country's microbiology community to the world and accrediting one of the strongest microbiological associations in the region. Despite the efforts made and the success achieved, there is still a large gap between existing realities and expected standards in the diagnostic and therapeutic centers in the country. Infectious diseases and the mortality rate due to these diseases are the most important challenges that all clinical professionals in different countries, including in our country are facing them. This fact shows the urgency of reviewing this issue by country's health care directors through paying more attention to the microbiology and improving this science in the clinical point of view. To this end, different experts will present their scientific views on crisis management, the need for an in-depth review of the issue and the ways to prevent infection and mortality from a microbiological point of view at this meeting. At the eighteenth Congress, I want to commemorate our lost colleagues Professor Alireza Amiri Gharagozloo, the founder of the Iranian Society of Microbiology, and Dr. Bahman Tabarei, a previous member of the board of directors of the Iranian Society of Microbiology .

At the end, I take the opportunity to welcome you all to the 18th International Congress of Microbiology in Iran. Thank you for your participation and we apologize in advance for any possible shortcomings.

**Dr. Mohammad Mehdi Feizabadi**
**Chairman of the Congress**

**Dr. Abbas Ali Imani Fooladi**
**Scientific Secretary of the Congress**

# ارکان هجدهمین کنگره بین‌المللی میکروب شناسی ایران

۷ الی ۹ شهریور ماه ۱۳۹۶ / دانشکده پزشکی، دانشگاه علوم پزشکی تهران

رییس کنگره

دکتر محمد مهدی فیض آبادی

دبیر علمی کنگره

دکتر عباسعلی ایمانی فولادی

دبیر اجرایی کنگره

دکتر داوود دربان ساروخلیل

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فرانک رضایی / دانشگاه علوم پزشکی لرستان
حسین رضایی زاده / دانشگاه علوم پزشکی تهران
عبدالناصر رفیع / دانشگاه علوم پزشکی تبریز
رشید رمضان زاده / دانشگاه علوم پزشکی کردستان
رضا رنجبر / دانشگاه علوم پزشکی بقیه الله
محمد رهبر / آزمایشگاه مرجع سلامت
پژمان روحانی / دانشگاه علوم پزشکی شهید بهشتی
مهدی رئیسی / مجله میکروب شناسی مواد غذائی
مجید زارع بیدکی / دانشگاه علوم پزشکی بیرجند
محمد رضا زالی / مرکز تحقیقات و گوارش و کبد بیمارستان طالقانی
آرمان زرگران / دانشگاه علوم پزشکی تهران
غلامرضا زرینی / دانشگاه تبریز
هنگامه زندی / دانشگاه علوم پزشکی یزد
تقی زهرائی صالحی / دانشگاه تهران

محمد حسین سالاری / دانشگاه علوم پزشکی تهران
ماندانا ستاری / دانشگاه علوم پزشکی شهید بهشتی
ستاره سروش / دانشگاه علوم پزشکی لرستان
احمدرضا سروش / دانشگاه علوم پزشکی تهران
جعفر سلیمیان / دانشگاه علوم پزشکی بقیه الله
سید داور سیادت / انستیتو پاستور ایران
آرش سیفی / دانشگاه علوم پزشکی تهران
رضا شاپوری / دانشگاه آزاد اسلامی واحد زنجان
فرشته شاهچراغی / انستیتو پاستور ایران
سید ابوالحسن شاهزاده فاضلی / هیئت علمی جهاد دانشگاهی
حسن شجاعی / دانشگاه علوم پزشکی اصفهان
اصغر شریفی / دانشگاه علوم پزشکی یاسوج
مسعود شریفی / دانشگاه علوم پزشکی قزوین
علی اکبر شعبانی / دانشگاه علوم پزشکی سمنان
شهرام شهرکی / دانشگاه علوم پزشکی زاهدان
محمد حسن شیرازی / دانشگاه علوم پزشکی تهران
حوریه صادری / دانشگاه علوم پزشکی شاهد
نور خدا صادقی فرد / دانشگاه علوم پزشکی ایلام
محمدرضا صالحی / دانشگاه علوم پزشکی تهران
غلامرضا صالحی جوزانی / انستیتو بیوتکنولوژی کشاورزی
میترا صالحی سیرجان / دانشگاه آزاد اسلامی واحد تهران شمال
مصطفی صالحی وزیری / انستیتو پاستور ایران
محمد رضا صعودی / دانشگاه الزهراء
سارا صعودی / دانشگاه تربیت مدرس
محمود صفاری / دانشگاه علوم پزشکی کاشان
پروانه صفاریان / دانشگاه آزاد اسلامی واحد علوم تحقیقات
شیلا صفائیان / سازمان غذا و دارو
حسین صمدی کفیل / دانشگاه علوم پزشکی تبریز
مروت طاهری کلانی / دانشگاه علوم پزشکی لرستان
پیام طبرسی / دانشگاه علوم پزشکی شهید بهشتی
بهمن عابدی کیاسری / موسسه تحقیقات واکسن و سرم سازی رازی

عباس عبدالهی / دانشگاه علوم پزشکی فسا
احیا عبدی عالی / دانشگاه الزهرا
رامین عبیری / دانشگاه علوم پزشکی کرمانشاه
محمدرضا عربستانی / دانشگاه علوم پزشکی همدان
حسین عرفانی / وزارت بهداشت، درمان و آموزش پزشکی
رمضانعلی عطایی / دانشگاه علوم پزشکی بقیه الله
آتوسا علی احمدی / مرکز تحقیقات گیاهان دارویی دانشگاه شهید بهشتی
محمد یوسف علیخانی / دانشگاه علوم پزشکی همدان
حمید عمادی کوچک / دانشگاه علوم پزشکی تهران
محمد جواد غروی / دانشگاه علوم پزشکی ایران
احسان اله غزنوی راد / دانشگاه علوم پزشکی اراک
سبحان غفوریان / دانشگاه علوم پزشکی ایلام
حسین فاضلی / دانشگاه علوم پزشکی اصفهان
بهرام فتح اله زاده / دانشگاه علوم پزشکی تهران
کامبیز فرقان پرست / دانشگاه علوم پزشکی گیلان
خسرو فرهی / دانشگاه علوم پزشکی تهران
هما فروهش تهرانی / دانشگاه علوم پزشکی ایران
جمشید فقری / دانشگاه علوم پزشکی اصفهان
طاهره فلسفی / دانشگاه الزهرا
جمشید فولادی / دانشگاه الزهراء
فرزانه فیروزه / دانشگاه علوم پزشکی کاشان
محمد مهدی فیض آبادی / دانشگاه علوم پزشکی تهران
رایناک قادری / موسسه تحقیقات واکسن و سرم سازی رازی
مصطفی قانعی / انستیتو پاستور ایران
کیارش قزوینی / دانشگاه علوم پزشکی مشهد
ابوالفضل قلی پور / دانشگاه علوم پزشکی شهرکرد
روحا کسری کرمانشاهی / دانشگاه الزهرا
روح اله کشاورز / آزمایشگاه تشخیص تحقیق و تهیه توبرکولین، مالئین و یونین
داود کلانتر نیستانکی / دانشگاه علوم پزشکی کرمان
محمد کمالی نژاد / دانشگاه علوم پزشکی شهید بهشتی
هادی کیوان فر / دانشگاه تهران

غلامرضا گودرزی / دانشگاه علوم پزشکی لرستان
محمد مهدی گویا / مرکز مدیریت بیماری های واگیر
پرویز مالک نژاد / دانشگاه علوم پزشکی تهران
علی مجتهدی / دانشگاه علوم پزشکی گیلان
اشرف محبتی مبارز / دانشگاه تربیت مدرس
سید رضا محبی / دانشگاه علوم پزشکی شهید بهشتی
محمد رضا محزونیه / دانشکده دامپزشکی- دانشگاه شهرکرد
پریسا محمدی / دانشگاه الزهراء
مرجان محمدی / انستیتو پاستور ایران
فاطمه محمدی پناه / دانشگاه تهران-دانشکده علوم
حمیده محمود زاده حسینی / دانشگاه علوم پزشکی بقیه الله(عج)
طلعت مختاری آزاد / دانشگاه علوم پزشکی تهران
سهیلا مرادی بیدهندی / موسسه تحقیقات واکسن و سرم سازی رازی
کریم مردانی / دانشگاه علوم پزشکی ارومیه
ناهید مژگانی / موسسه تحقیقات واکسن و سرم سازی رازی
سیامک مسعودی / سازمان حفاظت محیط زیست
زهره مشاک / دانشگاه آزاد اسلامی واحد کرج
احسان مصطفوی / انستیتو پاستور ایران
نادر مصوری / موسسه تحقیقات واکسن و سرم سازی رازی
نسرین معظمی / سازمان پژوهشهای علمی و صنعتی ایران
مریم مقدم متین / دانشگاه فردوسی مشهد
شهلا منصوری / دانشگاه علوم پزشکی کرمان
سید حمید رضا منوری / دانشگاه علوم پزشکی ایران
رضوان منیری / دانشگاه علوم پزشکی کاشان
پرویز مهاجری / دانشگاه علوم پزشکی کرمانشاه
علی مهرابی توانا / دانشگاه علوم پزشکی بقیه الله
سید فضل الله موسوی / انستیتو پاستور ایران
علی میرحسینی / دانشگاه علوم پزشکی بقیه الله
سید سعید میردامادی / پژوهشکده زیست فناوری سازمان پژوهش های علمی و صنعتی
مهدی میرزائی / دانشگاه علوم پزشکی شاهرود
اکبر میرصالحیان / دانشگاه علوم پزشکی تهران

شیوا میرکلانتری / دانشگاه علوم پزشکی سمنان
رضا میرنژاد / دانشگاه علوم پزشکی بقیه الله
محبوبه نادری نسب / دانشگاه علوم پزشکی مشهد
مهشید ناصحی / مرکز مدیریت بیماریهای وزارت بهداشت
شهین نجار پیرایه / دانشگاه تربیت مدرس
صمد نژاد ابراهیمی / مرکز تحقیقات گیاهان دارویی دانشگاه شهید بهشتی
بیژن نعمان پور / دانشگاه علوم پزشکی کرمانشاه
مصطفی نعمتی / دانشگاه علوم پزشکی ایلام
محمد حسن نمایی / دانشگاه علوم پزشکی بیرجند
محمد رضا نهایی / دانشگاه علوم پزشکی تبریز
جمیله نوروزی / دانشگاه آزاد اسلامی واحد علوم تحقیقات
مهدی نوروزی / دانشگاه علوم پزشکی تهران
مجتبی نوفلی / موسسه تحقیقات واکسن و سرم سازی رازی
محمد نیاکان / دانشگاه علوم پزشکی شاهد
ایرج نیکوکار / دانشگاه علوم پزشکی گیلان
مسعود هاشم زاده / موسسه تحقیقات واکسن و سرم سازی رازی
غلامرضا هاشمی تبار / دانشگاه فردوسی
مجتبی هدایتی / دانشگاه علوم پزشکی گیلان
ناصر هرزندی / دانشگاه آزاد اسلامی واحد کرج
زویا هژبری ماهانی / دانشگاه علوم پزشکی سمنان
فرزام وزیری / انستیتو پاستور ایران
جلیل وند یوسفی / موسسه تحقیقات واکسن و سرم سازی رازی
امیر هوشنگ الوندی / دانشگاه علوم پزشکی کرمانشاه
یوسف یحیی پور / دانشگاه علوم پزشکی بابل
سمیه یسلیانی فرد / دانشگاه علوم پزشکی البرز
رسول یوسفی مشعوف / دانشگاه علوم پزشکی همدان

## اعضای کمیته اجرایی/ به ترتیب حروف الفبای فارسی

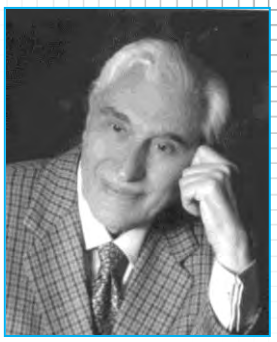
| | | |
|---|---|---|
| آزاده احمدی | محسن حیدری | زینب عزیزیان |
| پیمان آرایشگر | مسعود داداشی | محمد امین فسونگر |
| نجمه اردشیری | مصیب دالوند | رباب فنایی |
| سمانه استاد محمدی | عطیه دربندی | محمد قربانی |
| سهیلا استاد محمدی | حسینعلی راهدار | جلیل کاردان |
| نسرین اسدی | ندا رسول زاده | حسین کاظمیان |
| شیما افراسیابی | الهه رضایی | مرتضی کرمی |
| امیر امامی | اکرم رضایی | مهتاب کریمی نیا |
| کیانا امیری | شیوا رضایی | پگاه کنعانی زاده |
| مریم امیدوار | اکرم زند | مریم کوپایی |
| سارا بافنده | آذین ستاری | آیسان گلکار |
| نرجس بستان قدیری | صابر سلطانی | فروغ گودرزی |
| سمیه بهرامی | مهشید سیروش | الهه لشنی |
| دکتر مریم پورحاجی باقر | حمیده شفیعی | رضوان محراب |
| رقیه پورعبدالهی | محمد شعله | رخساره محمد زاده |
| الهه تاکی | عارفه شهریاری | نیما محمدزاده |
| الهام تقی نیا | علی شیوایی | گلناز مردانی |
| شایان توکلیان | سارا صادقی | مریم نجفی |
| سمیه جاسمی | یاسمن صادقی | یحیی نجفی |
| صبا جلالی فر | فهیمه صفرنژاد تمشکل | زهرا نجفی علیا |
| زهرا جلیلی | مریم ضمیرنستا | زهرا نیکپور |
| بیتا جناقی | مرضیه طاهری | منصوره هوشیار |
| نگار چگینی | الهام عباسی | فاطمه یزدانی |
| حمید رضا حوری | رضا عزیزیان | |

## حامیان کنگره

۱. دانشگاه علوم پزشکی تهران
۲. شرکت آب و فاضلاب استان تهران
۳. ستاد توسعه زیست فناوری معاونت علمی و فناوری ریاست جمهوری
۴. وزارت بهداشت، درمان و آموزش پزشکی
۵. موسسه تحقیقات واکسن و سرم سازی رازی
۶. انستیتو پاستور ایران
۷. دانشگاه علوم پزشکی ایلام
۸. مرکز مدیریت بیماریهای واگیر
۹. سازمان نظام دامپزشکی جمهوری اسلامی ایران

آشنایی با برخی از

# پیشکسوتان میکروب شناسی ایران



## دکتر محمود اردهالی

### استاد پیشکسوت

دکتر محمود اردهالی متولد ۱۳۰۹ ، دارای مدرک دکتری دامپزشکی از دانشگاه تهران و تا تاریخ ۲۰/ ۱۲/ ۱۳۷۹ استاد پژوهشی و عضو هیئت علمی و رئیس بخش تحقیق و تولید واکسن‌های باکتریایی بی‌هوازی در موسسه تحقیقات سرم و واکسن‌سازی رازی حصارک بوده‌اند. ایشان از سال ۱۳۳۵ در موسسه رازی مشغول خدمت گردیده و انگیزه استخدام ایشان در این موسسه علاقه به کارهای علمی و پژوهشی بوده است. در شروع خدمت دستیار بخش تشخیص و تولید واکسن‌های دامی بوده و در سال ۱۳۳۳ به علت افزایش درخواست واکسن‌های دامی، بخش تولید واکسن‌های دامی به دو بخش تحقیق و تولید واکسن‌های هوازی و بی‌هوازی مجزا گردید و لذا ایشان ابتدا به سمت دستیار آزمایشگاه، رئیس آزمایشگاه، معاون بخش و رئیس بخش تحقیق و تولید واکسن‌های بی‌هوازی منصوب گردیده و از سال ۱۳۵۶ تا ۱۳۷۹ رئیس بخش بوده‌اند.

از فعالیت‌های دیگر ایشان مسئولیت چاپ آرشیو موسسه رازی از شماره ۱۵ تا ۳۵ با سرپرستی آقای دکتر میر شمسی بوده است.

دوره‌های آموزشی که در خارج از کشور گذرانده‌اند بشرح زیر خلاصه می‌گردد:

***۱- موسسه فایزر انگلستان در سال های ۴۱-۱۳۴۰***

در این موسسه پژوهش و تولید واکسن‌های هوازی و بی‌هوازی و سرم‌های مختلف صورت می‌گیرد. تولید واکسن‌های هوازی و بی‌هوازی در این موسسه با فرمانتور صورت می‌گرفت ولی کماکان برخی از واکسن‌ها در شیشه تولید می‌گردید. در این مدت ایشان تولید واکسن‌های دامی در فرمانتور و شیشه و همچنین کنترل کیفی واکسن‌ها با روش استاندارد بین‌المللی مورد مطالعه قرار دادند و تعدادی از سوش های تولید واکسن‌های بی‌هوازی که ارزش فوق‌العاده‌ای برای تولید واکسن‌ها در موسسه رازی دارا می باشند به ایران آوردند که مورد استفاده قرار می‌گیرد.

***۲- دوره میکروبیولوژی دامپزشکی در موسسه پولاوی لهستان ۱۳۴۶***

موسسه پولاوی در لهستان یکی از موسسات تحقیقات دامپزشکی می‌باشد. ایشان در دوره میکروبیولوژی که برای مدت سه ماه در این موسسه تشکیل گردیدشرکت نمودند. در این دوره علاوه

بر کلاس‌های تئوری که توسط پژوهشگران این موسسه برگزار گردید کارهای عملی میکروبیولوژی را نیز که روزانه انجام می‌گرفت، آموختند.

***۳= انستیتو پاستور لیون – فرانسه در سال ۱۳۴۷***

درانستیتو پاستور لیون که شعبه انستیتو پاستور پاریس می‌باشد، پژوهش‌های علمی بر روی باکتری‌های هوازی و بی‌هوازی و همچنین ویروس‌ها انجام می‌گیرد. ایشان در بخش تشخیص و تحقیق باکتری‌های بی‌هوازی به مدت شش ماه کارآموزی نمودند. در این مدت تشخیص باکتری‌های بی‌هوازی که عوامل بیماری‌های مختلف در انسان می‌باشند را مورد بررسی و مطالعه قرار دادند.

***۴- انستیتو سروتراپی تولوز- فرانسه ۱۳۶۴***

موسسه سروتراپی تولوز شعبه موسسه مریو فرانسه برای تولید واکسن‌های دامی می‌باشد. در این موسسه اغلب واکسن‌های دامی از جمله واکسن‌های باکتریایی بی‌هوازی تولید می‌گردند. ایشان در این موسسه روش تولید واکسن‌های بی‌هوازی را با فرمانتور فرا گرفتند.

***۵- هفتمین دوره تولید واکسن در موسسه ریجکز(Rijkz) – هلند ۱۳۵۹***

در موسسه ریجکز هلند تمام واکسن‌های باکتریایی و ویروسی مصرف انسانی تهیه و تولید می‌شوند. تولید واکسن‌ها با روش‌های مدرن فرمانتور و اولترافیلتر می‌باشد. ایشان در یک دوره دو ماهه علاوه بر دروس تئوری تولید واکسن‌های مختلف انسانی، در آزمایشگاه‌های مختلف نیز کارآموزی نمودند.

ایشان در تعدادی کنگره، سمپوزیوم‌های بین‌المللی در رابطه با بیماری‌های ناشی از باکتری‌های بی‌هوازی دامی در کشورهای مختلف از جمله فرانسه، انگلستان، هلند، اسپانیا، کانادا و مالزی شرکت نموده و مقالات علمی ارائه نمودند. همچنین در کنگره و سمینارهای داخلی سخنرانی‌هایی در رابطه با واکسن‌های باکتریایی بی‌هوازی و بیماری‌های ناشی از باکتری‌های بی‌هوازی ایراد کرده‌اند.

آقای دکتر محمود اردهالی در سال ۱۳۷۹ با سابقه درحدود ۴۵ سال خدمت در موسسه تحقیقات واکسن و سرم سازی رازی به افتخار بازنشستگی نائل آمدند.

## خانم دکتر روحا کسری کرمانشاهی

### استاد پیشکسوت

خانم دکتر روحا کسری کرمانشاهی در ۹ آذر ماه سال ۱۳۳۲ در شهر قائم شهر متولد شد. و پس از طی دوران تحصیلات ابتدایی و متوسطه در سال ۱۳۵۶ مدرک کارشناسی خود را در رشته زیست شناسی از دانشگاه تبریز اخذ نمودند. و سپس درسال ۱۹۷۷ مفتخر به دریافت مدرک کارشناسی ارشد میکروبیولوژی و در سال ۱۹۸۱ موفق به دریافت مدرک دکتری (Ph.D) از دانشگاه بین اللملی پاریس XI درکشور فرانسه گردید. ایشان پس از بازگشت به ایران در سال ۱۳۶۴در دانشگاه اصفهان شروع بکار نمودند و تا سال ۱۳۸۶ در امر آموزش و پژوهش در این دانشگاه فعالیت داشتند. که حاصل آن تربیت صدها متخصص میکروبشناسی می‌باشد که هم اکنون در سراسر کشور مشغول به فعالیت می باشند .ایشان در سال ۱۳۸۰ به رتبه استادی نایل شدند و از سال ۱۳۸۶ تا کنون در دانشگاه الزهرا(س) مشغول تحقیق و تدریس می باشند. از جمله فعالیتهای ایشان عبارتند از :

۱- ۱۰ عنوان کتاب علمی و تخصصی دانشگاهی
۲- تعداد کثیری مقالات علمی و پژوهشی داخلی، خارجی و ISI
۳- استاد راهنمای ۲۶ رساله دکتری داروسازی و ۲۰ رساله دکتری (Ph.D) و دهها پایان‌نامه کارشناسی ارشد در زمینه میکروبیولوژی و بیوتکنولوژی
۴- سردبیر مجله علمی و پژوهشی زیست‌شناسی کاربردی
۵- عضو هیئت تحریریه چندین مجله انگلیسی و فارسی علمی و پژوهشی
۶- چهره ماندگار میکروبیولوژی و فرهیخته بین‌المللی استان مازندران
۷- استاد نمونه پژوهشی و آموزشی دانشگاه مازندران و الزهرا (س)

## دکتر تقی زهرایی صالحی

### ( از پژوهشگران یک درصد برتر جهان )[1]

دکتر تقی زهرایی صالحی در سال ۱۳۴۳ در شهرستان بویین زهرای استان قزوین متولد و در سال۱۳۶۲ در رشته دامپزشکی دانشگاه تهران پذیرفته شد. ایشان دکترای عمومی دامپزشکی را در ۲۸ شهریور ماه ۱۳۶۸ در طی پنج سال و نیم به پایان رسانید و در همان سال در اولین آزمون دوره تخصصی میکروبیولوژی دامپزشکی در ایران با رتبه اول به عنوان بورسیه دانشگاه تهران پذیرفته شد و از اول مهرماه ۱۳۶۸تحصیل در این رشته را آغاز نمود و در ۲۸ شهریور ماه ۱۳۷۳ پایان نامه دکترای تخصصی خود را در زمینه ساختار پادگنی سالمونلا تیفی موریوم دفاع و با درجه ممتاز فارغ التحصیل شد. ایشان از سال ۱۳۷۳به عنوان استادیار گروه میکروبیولوژی دانشکده دامپزشکی مشغول خدمت گردید و در طی این مدت تحقیقات مختلفی در زمینه باکتریها به ویژه سالمونلاها و اشریشیا کلی به صورت طرح تحقیقاتی و پایان‌نامه دکترای عمومی وتخصصی ارائه نموده است که حاصل آن انتشار بیش از ۲۲۰مقاله علمی و پژوهشی و ISI در مجلات علمی داخلی و خارجی و همچنین ارائه بیش از ۲۰۰ مقاله در کنفرانس‌های داخلی و بین‌المللی است. از آثاردیگر ایشان تالیف و ترجمه دو جلد کتاب در زمینه سالمونلا و بیماریهای باکتریایی است. دکتر زهرایی در خرداد ماه ۱۳۸۱ به مرتبه دانشیاری و در سال ۱۳۸۵ به مرتبه استادی ارتقاء یافت و هم اکنون نیزمدیر گروه میکروبیولوژی و ایمونولوژی دانشکده دامپزشکی دانشگاه تهران می‌باشد. از افتخارات ایشان مجری برگزیده طرح، پژوهشگر نمونه، مترجم کتاب برگزیده، پژوهشگر ممتاز کشور، استاد آموزشی برگزیده، و در پایان کسب افتخار رتبه پژوهشگران یک درصد برتر جهان می‌باشد.

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[1] ملاک انتخاب پژوهشگران برتر جهان مرجعیت علمی است. شاخصی که براساس تعداد ارجاعات و استنادهای صورت گرفته به پژوهش‌های پژوهشگران تعیین می‌شود. بر این اساس، ISI برای انتخاب دانشمندان یک درصد برتر دنیا، تعداد استنادهای صورت گرفته به پژوهش های محققان در ۱۰ سال اخیر را شمارش کرده و این محققان را در ۲۲ رشته موضوعی طبقه‌بندی می‌کند. سپس این محققان براساس تعداد استنادهای دریافتی به صورت نزولی مرتب سازی می‌شوند و یک درصد برتر از هر رشته به عنوان دانشمندان برتر انتخاب می‌شوند.

# برنامه روزانه

هجدهمین کنگره بین‌المللی میکروب شناسی ایران

# برنامه سخنرانی‌ها در سالن ابن سینا

| سه شنبه ۱۳۹۶/۶/۷ | |
|---|---|
| ۸:۰۰ الی ۸:۴۵ | افتتاحیه |
| | قرائت قرآن و سرود ملی جمهوری اسلامی ایران |
| | سخنرانی و خوشامدگویی رییس انجمن میکروب شناسی ایران دکتر محمد مهدی فیض آبادی |
| | سخنرانی مقام مدعو |
| | سخنرانی دبیر علمی کنگره دکتر عباسعلی ایمانی فولادی |

| ساعت | سخنران | عنوان سخنرانی |
|---|---|---|
| ۸:۴۵ الی ۹ :۱۰ | Prof. Nicole Guiso | The evolution of the Bordetella species since their discovery |
| ۹ :۱۰ الی ۹ :۳۵ | Prof. Andrea Masotti | Biophysical and Biological characterization of outer membrane Vesicle from Bacteria and probiotics |
| ۹:۳۵ الی ۱۰:۰۰ | Prof. Brigitte Gicquel | The continuous fight against tuberculosis |
| ۱۰:۰۰ الی ۱۰:۳۰ | **پذیرایی و بازدید از پوسترها** | |
| ۱۰:۳۰ الی ۱۱ | دکتر محمدرضا زالی | نقش میکروبیوتای دستگاه گوارش و سندروم های متابولیک |
| ۱۱ الی ۱۲ :۲۵ | **پانل میکروبیوتا و بیماریهای غیر عفونی** | |

**رئیس پانل: دکتر مصطفی قانعی** (استاد ، دانشگاه علوم پزشکی بقیه الله، انستیتو پاستور ایران)

**اعضاء پانل:** دکتر محمدرضا زالی(استاد- مرکز تحقیقات گوارش دانشگاه علوم پزشکی شهید بهشتی)، دکتر احمدرضا سروش (استاد- مرکز تحقیقات چاقی و عادات غذایی پژوهشگاه علوم غدد و متابولیسم دانشگاه علوم پزشکی تهران)، دکتر سعید بوذری (استاد- انستیتو پاستور ایران)، دکتر سید داور سیادت (استاد- انستیتو پاستور ایران)، دکتر پژمان روحانی (بیمارستان کودکان مفید، دانشگاه علوم پزشکی شهید بهشتی) ، Prof. Andrea Masotti

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| ۱۱ الی۱۱:۲۰ | دکتر مصطفی قانعی | میکروبیوتا و بیماری های ریوی |
| ۱۱:۲۰الی۱۱:۴۰ | دکتر احمدرضا سروش | میکروبیوتا و بیماری های متابولیکی |
| ۱۱:۴۰الی۱۱:۵۵ | دکتر سید داور سیادت | The Gut-Brain Axis |

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| ۱۱:۵۵الی ۱۲:۱۰ | دکتر پژمان روحانی | میکروبیوتا و بیماری های التهابی دستگاه گوارش |
| ۱۲:۱۰ الی ۱۲:۲۵ | بحث و تبادل نظر | |
| ۱۲:۲۵ الی ۱۳ | **تقدیر از پیشکسوتان** | |
| ۱۳ الی ۱۴:۰۰ | **نماز، نهار و استراحت** | |
| **ساعت** | **سخنران** | **عنوان سخنرانی** |
| ۱۴:۰۰الی ۱۴:۳۰ | دکتر امیرعلی حمیدیه | وضعیت درمان بیماریهای عفونی با استفاده از سلولهای بنیادی |
| ۱۴:۳۰الی ۱۶:۰۰ | **پانل سلولهای بنیادی و بیماریهای عفونی** | |
| **رئیس پانل: دکتر امیر علی حمیدیه** ( انکولوژی کودکان، دبیر ستاد توسعه علوم و فناوری های سلول های بنیادی)<br>**اعضای پانل:** دکتر راحله حلبیان (استادیار، دانشگاه علوم پزشکی بقیه الله (عج))، دکتر مریم مقدم متین ( دانشگاه فردوسی مشهد) ، دکتر سارا صعودی (دانشگاه تربیت مدرس)، مصطفی‌اجتهادی‌فر (دانشگاه علوم پزشکی اراک)، دکتر عباسعلی ایمانی فولادی (استاد، دانشگاه علوم پزشکی بقیه الله (عج) | | |
| ۱۴:۳۰ الی ۱۴:۴۵ | دکتر راحله حلبیان | استفاده از سلولهای بنیادی مزانشیمی مقاوم حاوی متابولیت باکتریایی به منظور درمان بیماری عفونی |
| ۱۴:۴۵ الی ۱۵:۰۰ | دکتر سارا صعودی | بررسی اثر ایمنومودولاتوری سلولهای بنیادی مزانشیمی در کنترل عفونت |
| ۱۵:۰۰ الی ۱۵:۱۵ | دکتر مریم مقدم متین | نقش عوامل عفونی ایجاد کننده بیماری عصبی (MS) و کاربرد سلولهای بنیادی در درمان این بیماریها |
| ۱۵:۱۵الی ۱۵:۳۰ | مصطفی اجتهادی فر | بررسی اثر توکسین باکتریایی بر سلولهای سرطان خون درمجاورت سلولهای بنیادی |
| ۱۵:۳۰ الی ۱۶:۰۰ | **بحث و تبادل نظر** | |
| ۱۶:۰۰ الی ۱۶:۳۰ | **پذیرایی و بازدید از پوسترها** | |
| ۱۶:۳۰ الی ۱۸:۰۰ | **پانل راهبردهای نوین در مدیریت آزمایشگاههای پزشکی** | |
| **رئیس پانل:** دکتر غلامرضا ایراجیان (استاد، دانشگاه علوم پزشکی ایران)<br>**اعضاء پانل:** دکترمحمد جوادغروی( دانشگاه علوم پزشکی ایران)، دکتر رضا مشکانی(استاد، دانشگاه علوم پزشکی تهران)، دکتر عبدالفتاح صراف‌نژاد(استاد، دانشگاه علوم پزشکی تهران )، دکتر محمد علی‌برومند(استاد، دانشگاه علوم پزشکی تهران )، دکتر سعید مهدوی | | |

| چهارشنبه۱۳۹۶/۶/۸ | | |
|---|---|---|
| ۸:۰۰ الی ۸:۳۰ | Prof. Luis Martinez | Detection of carbapenemases in Enterobacteria: phenotypic and genotypic methods |
| ۸:۳۰ الی ۱۰:۰۰ | **پانل مدیریت مقاومت های میکروبی** | |
| **رئیس پانل:** دکتر محمدرضا صالحی(دانشگاه علوم پزشکی تهران)<br>**اعضاء پانل:** دکتر پیام طبرسی(دانشگاه علوم پزشکی شهید بهشتی)، دکتر سید علی دهقان منشادی (دانشگاه علوم پزشکی تهران)، دکتر بابک عشرتی، دکتر ندا علیخانی، دکتر محمد ایمان عینی(دانشگاه علوم پزشکی تهران )، Prof. Luis Martinez | | |
| ۸:۳۰ الی ۸:۵۰ | دکتر پیام طبرسی | معرفی بیمار مبتلا به پنومونی ناشی از اسینتو باکتر |
| ۸:۵۰ الی ۹:۰۵ | دکتر سید علی دهقان منشادی | معرفی بیمار مبتلا به اندوکاردیت انتروککی VRE |
| ۹:۰۵ الی ۹:۲۰ | دکتر محمدرضا صالحی | معرفی بیمار مبتلا به عفونت کاتتر عروقی با کلبسیلا ( KPC) |
| ۹:۲۰ الی ۹:۳۰ | دکتر ندا علیخانی | معرفی بیمار با ارتریت سپتیک استافیلوکوکی MRSA |
| ۹:۳۰ الی ۹:۴۰ | دکتر بابک عشرتی | وضعیت برنامه مراقبت میکروبی در ایران |
| ۹:۴۰ الی ۹:۵۰ | دکتر محمد ایمان عینی | تازه های مربوط به مقاومت آنتی بیوتیکی استافیلوکوکوس اورئوس |
| ۹:۵۰ الی ۱۰:۰۰ | **بحث و تبادل نظر** | |
| ۱۰:۰۰الی ۱۰:۳۰ | **پذیرایی و بازدید از پوسترها** | |
| | **سخنران** | **عنوان سخنرانی** |
| ۱۰:۳۰ الی ۱۱ | Prof. Fillipa Lentzos | Biological Threats in the 21st Century |

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| ۱۱:۰۰ الی ۱۲:۵۰ | **پانل بیماری های عفونی نوپدید و بازپدید** | |
| **رئیس پانل: دکتر محمد مهدی گویا**<br>**اعضاء پانل:** دکتر حسین عرفانی (رییس اداره بیماری های مشترک انسان و دام وزارت بهداشت، درمان و آموزش پزشکی)، دکتر احسان مصطفوی (دانشیار، انستیتو پاستور ایران)، دکتر طلعت مختاری آزاد (دانشگاه علوم پزشکی تهران)، دکتر مصطفی صالحی وزیری (انستیتو پاستور ایران)، دکتر محمد خلیلی (استاد ،دانشکده دامپزشکی دانشگاه کرمان)، دکتر سیامک مسعودی (سازمان حفاظت محیط زیست)، دکتر حسام الدین اکبرین ( عضو هیات علمی دانشکده دامپزشکی دانشگاه تهران)، Prof. Fillipa Lentzos | | |
| ۱۱:۰۰ الی ۱۱:۳۵ | دکتر محمد مهدی گویا | بیماری های نوپدید و بازپدید و اهمیت آن ها در دنیا |
| ۱۱:۳۵ الی ۱۱:۴۵ | دکتر احسان مصطفوی | مروری بر آخرین اپیدمی بیماری های نوپدید و بازپدید در کشورهای همسایه ایران |
| ۱۱:۴۵ الی ۱۱:۵۵ | دکتر طلعت مختاری آزاد | مروری بر آخرین وضعیت بیماری آنفلوانزا در ایران |
| ۱۱:۵۵ الی ۱۲:۱۰ | دکتر مصطفی صالحی وزیری | مروری بر آخرین وضعیت بیماری های منتقله از پشه آئدس |
| ۱۲:۱۰ الی ۱۲:۲۰ | دکتر محمد خلیلی | مروری بر مطالعات انجام شده تب کیو در ایران |
| ۱۲:۲۰الی ۱۲:۳۰ | دکتر سیامک مسعودی | مروری بر وضعیت طاعون نشخوارکنندگان و تب برفکی در حیات وحش کشور |
| ۱۲:۳۰ الی ۱۲:۴۰ | دکتر حسام الدین اکبرین | مخاطرات و ارزیابی بیماری های دامپزشکی فرامرزی |
| ۱۲:۴۰ الی ۱۲:۵۰ | دکتر حسین عرفانی | مروری بر آخرین وضعیت بیماری تب خونریزی دهنده کریمه کنگو در ایران |
| ۱۲:۵۰الی ۱۴:۰۰ | **نماز، نهار و استراحت** | |
| ۱۴:۰۰الی ۱۴:۳۰ | Prof. Hans-Peter Klenk | Microbial diversity in the genomic era: the Genomic Encyclopaedia of Bacteria and Archaea |

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| ۱۴:۳۰الی ۱۶:۰۰ | **پانل تشخیص، تایپینگ و اپیدمیولوژی بیماریهای عفونی** | |
| **رئیس پانل: دکتر سهیلا مرادی بید هندی**(دانشیار، موسسه تحقیقات واکسن و سرم سازی رازی)<br>**اعضاء پانل:** : دکتر کیارش قزوینی(دانشیار، دانشگاه علوم پزشکی مشهد)، دکتر محمد مهدی اصلانی(استاد، انستیتو پاستور ایران)، دکتر پرستو احسانی(استادیار، انستیتو پاستور ایران)، دکتر رامین باقری نژاد(استادیار، موسسه تحقیقات واکسن و سرم سازی رازی)، دکتر کریم مردانی(استاد، دانشکده دامپزشکی دانشگاه ارومیه)، دکتر پرویز مهاجری(دانشگاه علوم پزشکی کرمانشاه)، دکتر احسان الله غزنوی راد(دانشگاه علوم پزشکی اراک)، دکتر نور امیرمظفری(استاد، دانشگاه علوم پزشکی ایران)<br>Prof. Hans-Peter Klenk | | |
| ۱۴:۳۰ الی ۱۴:۴۵ | دکتر محمد مهدی اصلانی | کلید های شناسایی در میکروب شناسی |
| ۱۴:۴۵ الی ۱۴:۵۵ | دکتر کیارش قزوینی | تایپینگ باکتری ها و پیشگیری از عفونت های بیمارستانی |
| ۱۴:۵۵ الی ۱۵:۰۵ | دکتر پرستو احسانی | استفاده از 16SrRNA در تشخیص، تایپینگ و اپیدمیولوژی عوامل بیماری های عفونی |
| ۱۵:۰۵ الی ۱۵:۱۵ | دکتر رامین باقری نژاد | روش های میکروبی و ملکولی جهت شناسایی و تایپینگ بروسلا |
| ۱۵:۱۵الی ۱۵:۲۵ | دکتر کریم مردانی | اپیدمیولوژی و روش های تشخیصی نوین عامل بیماری تب Q |
| ۱۵:۲۵ الی ۱۵:۳۵ | دکتر پرویز مهاجری | Bacterial Molecular typing methods;Advantages and disadvantages |
| ۱۵:۳۵ الی ۱۵:۴۵ | دکتر احسان الله غزنوی راد | Comparison of phenotypic and genotypic method for Campylobacter diagnosis from dysentery samples |
| ۱۵:۴۵ الی ۱۶:۰۰ | بحث وتبادل نظر | |
| ۱۶:۰۰ الی ۱۶:۳۰ | | **پذیرایی و بازدید از پوسترها** |
| ۱۶:۳۰ الی ۱۷:۰۰ | Prof. Javier Garau | Carbapenemase producing Klebsiella pneumoniae |

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| ۱۷:۰۰ الی ۱۸:۳۰ | **پانل واکسن های باکتریایی** | |
| **رئیس پانل: : دکتر مجتبی نوفلی**(استادیار، موسسه تحقیقات واکسن و سرم سازی رازی)<br>**اعضاء پانل**: دکتر اشرف محبتی مبارز (استاد، دانشگاه تربیت مدرس)، دکتر سید امیر جلالی (استادیار، دانشگاه علوم پزشکی شهید بهشتی)، دکتر ماندانا ستاری (استاد، دانشگاه علوم پزشکی شهید بهشتی)، دکتر فضل اله موسوی (دانشیار، انستیتو پاستور ایران) ، دکتر پژواک خاکی (دانشیار، موسسه تحقیقات واکسن و سرم سازی رازی) | | |
| ۱۷:۰۰الی۱۷:۴۰ | دکتر اشرف محبتی مبارز | واکسن های موثر علیه بوردتلا پرتوزیس در گذشته، حال و آینده |
| ۱۷:۴۰ الی ۱۷:۵۰ | دکتر سید امیر جلالی | Commensals promote anticancer immunotherapy |
| ۱۷:۵۰ الی ۱۸:۱۰ | دکتر مجتبی نوفلی | Pertussis OMV as a promising vaccine candidate |
| ۱۸:۱۰ الی ۱۸:۲۰ | دکتر ماندانا ستاری | Interleukin-33 as a potential immunotherapeutic strategy for chronic viral infections |
| ۱۸:۲۰ الی ۱۸:۳۰ | دکتر فضل اله موسوی | واکسن پنوموکک، اهمیت و چالش های آن |
| ۱۸:۳۰ الی ۱۸:۴۰ | دکتر پژواک خاکی | Leptospirosis vaccines |

## پنج شنبه ۱۳۹۶/۶/۹

| زمان | سخنران | عنوان سخنرانی |
|---|---|---|
| ۸:۰۰ الی ۸:۳۰ | Prof. Luis Martinez | Susceptibility testing of polymyxins in the clinical laboratory |
| ۸:۳۰ الی ۱۰:۰۰ | **پانل آنتی بیوتیک های با منشا طبیعی: وضعیت موجود و دورنمای آینده** | |
| **رئیس پانل: دکتر مهدی رزاقی ابیانه** ( استاد، انستیتو پاستور ایران)<br>**اعضاء پانل:** دکتر محمد رضا آصف ( موسسه تحقیقات آفات و بیماریهای گیاهی)، دکتر عباس حاج آخوندی (دانشگاه علوم پزشکی تهران)، دکتر محمود خدا دوست (دانشگاه علوم پزشکی شهید بهشتی)، دکتر حسین رضایی‌زاده ( دانشگاه علوم پزشکی تهران)، دکتر آرمان زرگران (دانشگاه علوم پزشکی تهران) ، دکتر محمد کمالی نژاد (دانشگاه علوم پزشکی شهید بهشتی)، دکتر مهدی نوروزی (دانشگاه علوم پزشکی تهران)، Prof. Luis Martinez | | |
| ۸:۳۰ الی ۸:۴۰ | دکتر محمد کمالی نژاد | گیاهان دارویی بومی ایران: طبقه بندی و پتانسیل‌های ضدمیکروبی |

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| ۸:۴۰ الی ۸:۵۰ | دکتر عباس حاج آخوندی | آنتی بیوتیک‌های با منشا گیاهی |
| ۸:۵۰ الی ۹:۰۰ | دکتر محمد رضا آصف | آنتی بیوتیک‌های مشتق از قارچ‌های ماکروسکوپی: پراکندگی، ساختار و طیف اثرات ضد میکروبی |
| ۹:۰۰ الی ۹:۱۰ | دکتر آرمان زرگران | جایگاه و کاربرد اسانس های گیاهان دارویی به عنوان ترکیبات ضد میکروبی |
| ۹:۱۰ الی ۹:۲۰ | دکتر محمود خدا دوست | کاربرد ترکیبات ضد میکروبی در طب سنتی |
| ۹:۲۰ الی ۹:۳۰ | دکتر مهدی نوروزی | کاربرد عصاره‌های گیاهی در کنترل عفونت‌های میکروبی دهان و دندان |
| ۹:۳۰ الی ۹:۴۰ | دکتر حسین رضایی زاده | تجاری‌سازی ترکیبات ضد میکروبی با منشأ طبیعی |
| ۹:۴۰ الی ۱۰:۰۰ | بحث وتبادل نظر | |
| ۱۰:۰۰ الی ۱۰:۳۰ | **پذیرایی و بازدید از پوستر ها** | |

| ساعت | سخنران | عنوان سخنرانی |
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| ۱۰:۳۰ الی ۱۱:۰۰ | Prof. Javier Garau | Infections in patients with cancer and immunocompromised individuals |
| ۱۱:۰۰ الی ۱۲:۳۰ | **پانل متابولیت های میکروبی و سرطان** | |

**رئیس پانل: دکتر عباسعلی ایمانی فولادی** (دانشگاه علوم پزشکی بقیه الله)

**اعضاء پانل:** دکتر حمیده محمودزاده حسینی (دانشگاه علوم پزشکی بقیه الله)، دکتر محسن امین (دانشگاه علوم پزشکی تهران)، دکتر راحله حلبیان (دانشگاه علوم پزشکی بقیه الله)، دکتر علی میر حسینی (دانشگاه علوم پزشکی بقیه الله)، دکتر مجتبی هدایتی (دانشگاه علوم پزشکی گیلان)، دکتر حزینی(دانشگاه علوم پزشکی تهران)، دکتر محمد علی فقیهی (دانشگاه میامی امریکا)، Prof. Javier Garau

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| ۱۱:۰۰الی ۱۱:۱۰ | دکتر حمیده محمودزاده حسینی | Extracellular vesicles from probiotic for cancer inhibition |
| ۱۱:۱۰الی ۱۱:۲۰ | دکتر محسن امین | Anticancer effects of arazyme, a bacterial protease |
| ۱۱:۲۰ الی ۱۱:۳۰ | دکتر راحله حلبیان | Compare effect of Nisin and living bacteria on apoptosis of colon cancer cell lines |
| ۱۱:۳۰الی ۱۱:۴۰ | دکتر مجتبی هدایتی | Therapeutic use of specific aptamers for microbial metabolites |

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| ۱۱:۴۰الی ۱۱:۵۰ | دکتر حزینی | عفونت های میکروبی و سرطان و نقش متابولیت های میکروبی در سرطان |
| ۱۱:۵۰الی ۱۲:۰۰ | دکتر علی میر حسینی | Botulinum Toxin in the Treatment of Prostate and Bladder Cancer |
| ۱۲:۰۰ الی ۱۲:۲۰ | **بحث و تبادل نظر** | |
| ۱۲:۲۰ الی ۱۳:۰۰ | **اختتامیه** | |

# سالن عزلت

| سه شنبه ۱۳۹۶/۶/۷ | | |
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| ساعت | سخنران | عنوان سخنرانی |
| ۱۰:۳۰ الی ۱۱:۰۰ | دکتر سید عباس شجاع السادات | برنامه هزاره ۱۴۰۴ بیوتکنولوژی صنعتی ستاد زیست فناوری |
| **۱۱:۰۰ الی ۱۲:۳۰** | **پانل کاربرد صنایع تخمیری در تولید محصولات دارویی و پزشکی** | |
| **رییس پانل: دکتر مهرداد آذین**<br>**اعضاء پانل:** : دکتر سید عباس شجاع السادات، دکتر محمدرضا صعودی، دکتر پریسا محمدی، دکتر احیا عبد عالی، دکتر پریسا تاجر | | |
| ۱۱:۰۰ الی ۱۱:۱۵ | دکتر سعید میردامادی | نقش پپتیدهای فعال در پیشگیری از بیماریها |
| ۱۱:۱۵الی ۱۱:۳۰ | دکتر مریم ابراهیمی | کاربرد پروبیوتیک های انسانی و دامی و وضعیت تولید آنها در کشور |
| ۱۱:۳۰ الی ۱۱:۴۵ | مهندس کامران حقیقی | تولید محصولات میکروبی جهت مبارزه بیولوژیک با آفات |
| ۱۱:۴۵ الی ۱۲:۰۰ | دکتر فرزانه عزیز محسنی | نقش بانکهای میکروبی در توسعه صنایع تخمیری دارویی و پزشکی |
| ۱۲:۰۰ الی ۱۲:۱۵ | دکتر مهدی دستغیب | زیست پالایی در پاکسازی خاکهای آلوده نفتی |
| ۱۲:۱۵ الی ۱۲:۳۰ | بحث تبادل نظر | |
| ۱۲:۳۰الی ۱۴:۰ | **نماز ، نهار و استراحت** | |
| ۱۴:۰۰ الی۱۶ | **پانل میکروبیولوژی مواد غذایی** | |
| **رییس پانل: دکتر ناهید رحیمی فرد**(دانشیار، رئیس بخش میکروبیولوژی مرکز آزمایشگاه‌های مرجع کنترل غذا و دارو)<br>**اعضاء پانل:** دکتر سهیل اسکندری (معاون حوزه ریاست دانشگاه علوم پزشکی و خدمات بهداشتی درمانی شهید بهشتی و عضو هیات علمی انستیتو تحقیقات تغذیه ای و صنایع غذایی کشور)، دکتر مریم تاج آبادی ابراهیمی(رئیس انجمن پروبیوتیک)، دکتر مهدی رئیسی ( مدیرمسئول مجله میکروب شناسی مواد غذائی)،دکتر امیر رحیمی راد(رئیس آزمایشگاه کنترل غذا و دارو دانشگاه علوم پزشکی و خدمات بهداشتی درمانی ارومیه)، دکتر سید رضا محبی، دکتر مسعود آل بویه(مرکز تحقیقات | | |

بیماریهای منتقله از آب و غذا، انستیتو تحقیقاتی بیماریهای گوارش و کبد دانشگاه علوم پزشکی و خدمات بهداشتی درمانی شهید بهشتی)، دکتر شهریار دبیریان(مدیر تضمین کیفیت شرکت صنایع شیر ایران )، دکتر بابک پوراکبری (مرکز تحقیقات بیماریهای عفونی دانشگاه علوم پزشکی و خدمات بهداشتی درمانی تهران، آزمایشگاه مجازرایمون دایان دانا سازمان غذا و دارو)، دکتر شیلا صفائیان (آزمایشگاه مجاز رازی سازمان غذا و دارو)، دکتر نسرین حاجی سید جوادی( انستیتو تحقیقات تغذیه ای و صنایع غذایی کشور)

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| ۱۴:۰۰ الی۱۴:۱۵ | دکترمسعود آل بویه | روش های مولکولی در آزمایشگاه میکروب شناسی مواد غذایی: کاربردها و تفسیر نتایج |
| ۱۴:۱۵ الی ۱۴:۳۰ | دکترسهیل اسکندری | لزوم برنامه‌ریزی و توسعه روش های تشخیص مولکولی میکروارگانیسم‌های بیماری‌زا با منشاء غذایی |
| ۱۴:۳۰ الی۱۴:۴۵ | دکترامیر رحیمی راد | بررسی آلودگی میکروبی کره های حیوانی تولید شده به روش سنتی در آزمایشگاه کنترل غذا و دارو ارومیه ( در طی سال ۱۳۹۳ لغایت سال ۱۳۹۵) |
| ۱۴:۴۵ الی ۱۵:۰۰ | دکتر سید رضا محبی | ردیابی هپاتیت های ویروسی گوارشی در مواد غذایی |
| ۱۵:۰۰ الی۱۵:۱۵ | دکتر بابک پوراکبری | کنترل کیفی فراورده های پروبیوتیک |
| ۱۵:۱۵ الی ۱۵:۳۰ | دکتر شهریار دبیریان | شناسایی فلور قارچی شیر خام دامداری‌های استان تهران وتاثیر آن درکیفیت محصولات |
| ۱۵:۳۰ الی۱۵:۴۵ | دکتر ناهید رحیمی فرد | پروتوکل صحه گذاری روشهای جایگزین در برابر یک روش مرجع |
| ۱۵:۴۵ الی ۱۶:۰۰ | **بحث تبادل نظر** | |
| ۱۶:۰۰الی ۱۶:۳۰ | **پذیرایی و بازدید از پوسترها** | |

## چهار شنبه ۱۳۹۶/۶/۸

**هیئت رئیسه:** دکتر شهره فرشاد، دکتر رشید رمضانزاده، دکتر رضا بیگ وردی، دکتر محسن ارزنلو، دکتر محسن امین

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| ۸:۳۰الی۸:۴۵ | Shohreh Farshad | MOLECULAR GENOTYPING OF SHIGELLA SONNEI STRAINS ISOLATED FROM CHILDREN WITH BLOODY DIARRHEA USING PULSED FIELD GEL ELECTROPHORESIS ON THE TOTAL GENOME AND PCR-RFLP OF IPAH AND IPABCD GENES |

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| DETECTION OF CLASSES 3 AND 4 INTEGRONS IN MULTI-DRUG RESISTANT E. COLI STRAINS AND GENOTYPIC CHARACTERIZATION BY PULSE FIELD GEL ELECTROPHORESIS IN WEST OF IRAN | Rashid Ramazanzadeh | ۸:۴۵ الی ۹:۰۰ |
| GENOMIC COMPARISONS OF TWO VANCOMYCIN-RESISTANT STAPHYLOCOCCUS AUREUS ISOLATES FROM KERMAN, IRAN | Davood Kalantar Neyestanaki | ۹:۰۰الی۹:۱۵ |
| AN IN VITRO EVALUATION OF PHOTOCYTOTOXICITY EFFECT OF PHOTO-THERMAL THERAPY USING NANO-CHITOSAN LOADED INDOCYANINE GREEN ON HUMAN GINGIVAL FIBROBLAST CELLS | Maryam Pourhajibagher | ۹:۱۵ الی ۹:۳۰ |
| THE ROLE OF EFFLUX PUMPS IN THE INDUCTION CHARACTERISTICS OF ANTIBIOTIC RESISTANCE IN ACINETOBACTER ISOLATES FROM CLINICAL SPECIMENS | Fatemeh Zhale | ۹:۳۰ الی ۹:۴۵ |
| FREQUENCY ANALYSIS OF ACRAB-OPRM EFFLUX PUMP GENES PREVALENCE IN CREATING ANTIBIOTIC RESISTANCE IN MORAXELLA CATARRHALIS CAUSING RESPIRATORY INFECTIONS WITH MULTIDRUG RESISTANCE IN CLINICAL SPECIMENS OF KAZEROON CITY | Parvin Mohammadshafie | ۹:۴۵ الی ۱۰:۰۰ |
| **پذیرایی و بازدید از پوسترها** | | ۱۰:۰۰ الی ۱۰:۳۰ |
| **پانل پروبیوتیک** | | ۱۰:۳۰الی ۱۲:۳۰ |

**رییس پانل: دکتر شهریار دبیریان** (مدیر تضمین کیفیت شرکت صنایع شیر ایران )

**اعضاء پانل:** دکتر سید سعید میردامادی (رییس پژوهشکده زیست فناوری سازمان پژوهش های علمی و صنعتی)، دکتر ناهید رحیمی فرد (دانشیار، دکتری تخصصی میکروب شناسی، سازمان غذا و دارو و رئیس بخش میکروبیولوژی مرکز آزمایشگاه‌های مرجع کنترل غذا و دارو ، وزارت بهداشت درمان آموزش پزشکی)، دکتر مریم تاج آبادی ابراهیمی (دکتری میکروبیولوژی، استادیار دانشگاه آزاد اسلامی، دپارتمان بیولوژی)، دکتر ناهید مژگانی (دانشیار موسسه تحقیقات واکسن و سرم سازی رازی)، دکتر سهیل اسکندری (معاونت فنی مدیر کل نظارت بر مواد غذایی آشامیدنی و بهداشتی سازمان غذا ودارو )

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| **رییس پانل: دکتر تقی زهرایی صالحی**(استاد،میکروب شناسی دامپزشکی، دانشگاه تهران)<br>**اعضاء پانل:** دکتر محمدرضا محزونیه (میکروب شناسی)، دکتر زینالی، دکتر نادر مصوری (میکروب شناسی، موسسه تحقیقات واکسن و سرم سازی رازی)، دکتر روح اله کشاورز (رئیس آزمایشگاه تشخیص تحقیق و تهیه توبرکولین، مالئین و یونین )، دکتر داریوش جهان پیما (دکتری دامپزشکی، مدیر کل دفتر بهداشت و مدیریت بیماریهای دامی سازمان دامپزشکی کشور)، دکتر مسعود حق خواه (میکروب شناسی)، دکتر علی محمد بهروزیخواه (میکروب شناسی) – دکتر عباس بهادر (میکروب شناسی، دانشگاه علوم پزشکی تهران) – دکتر غلامرضا هاشمی تبار (میکروب شناسی، دانشگاه مشهد) | | |
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| **رییس پانل:** دکتر روحا کسری کرمانشاهی (استاد، دانشگاه الزهراء)<br>**اعضاء پانل:** دکتر محمد رضا صعودی(استاد، دانشگاه الزهراء)،دکتر غلامحسین ابراهیمی پور(استاد، دانشگاه شهید بهشتی)، خانم مهندس مهرنوش امیر مظاهری(سازمان آب و فاضلاب)، خانم سهیلا جهانتاب(سازمان آب و فاضلاب) | | |

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# سالن طب تجربی

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| **هیئت رییسه:** دکتر ملیحه طالبی، دکتر علیشا اکیا، دکتر هادی پیری دوگاهه، دکتر محمد یوسف علیخانی ، دکتر عباس بهادر، دکتر نور امیر مظفری | | |
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| **هیئت رییسه:** دکتر پریسا بدیعی، دکتر مریم پور حاجی باقر ، دکتر فرشته جبل عاملی، دکتر مژده حاکمی والا، دکتر نیما حسینی جزنی، خانم هما فروهش تهرانی | | |
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| **چهار شنبه ۱۳۹۶/۶/۸** | | |
| **هیئت رئیسه :** دکتر مهدی میرزایی، دکترعلی مجتهدی، دکتر شهلا منصوری، دکتر اعظم حدادی، دکتر سرو ناز فلسفی ، دکتر رضا میر نژاد | | |
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| **هیئت رئیسه:** دکتر احیا عبدی عالی، دکتر مهرداد آذین، دکترحدیث توافی، دکتر پریسا تاجر، دکتر محمدرضا صعودی | | |
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| **هیئت رئیسه:** دکتر رامین عبیری، دکتر حسین دبیری، دکتر امیر هوشنگ الوندی، دکتر رضا رنجبر، دکتر محمد نیاکان | | |
| DIAGNOSTIC VALUE OF SEROLOGICAL AND MOLECULAR METHODS FOR SCREENING AND DETECTING CHLAMYDIA TRACHOMATIS INFECTION IN SEMEN SAMPLES OF INFERTILE MEN REFERRING TO ROYAN INSTITUTE | Amin Khoshakhlagh | ۱۴:۰۰ الی ۱۴:۱۵ |
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| **هیئت رئیسه:** دکتر پرویز مهاجری، دکتر ایرج نیکوکار، دکترمحمد آهنجان، دکتر محمد جواد نصیری، دکتر افسانه کرمستجی، دکتر مهری هائلی | | |
| THE MOST COMMON SPOLIGOTYPE OF MYCOBACTERIUM BOVIS ISOLATED IN THE WORLD AND THE RECOMMENDED LOCI FOR VNTR TYPING; A SYSTEMATIC REVIEW | Mahdis Ghavidel | ۱۰:۳۰ الی ۱۰:۴۵ |
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| FAST DETECTION OF STREPTOMYCIN RESISTANT ISOLATES OF CLINICAL STRAINS MYCOBACTERIUM TUBERCULOSIS BY PCR-RFLP AND SEQUENCING METHODS | Somaeyh Geravand | ۱۱:۰۰الی۱۱:۱۵ |
| DIFFERENT TREATMENT PROTOCOLS FOR ISOLATION OF NONTUBERCULOUS MYCOBACTERIA FROM AQUATIC SOURCES OF HOSPITALS IN TEHRAN | Somayeh Moradi | ۱۱:۱۵ الی ۱۱:۳۰ |
| DESIGNING DIRECT ELISA KEY FOR RECOGNIZING ENTEROTOXIN A STAPHYLOCOCCUS AUREUS IN RAW MILK SAMPLES TEHRAN PROVINCE | Arezoo Noori | ۱۱:۳۰ الی ۱۱:۴۵ |
| THE COMPARISON OF MOUSE BIOASSAY AND ELISA METHODS FOR THE DETECTION OF CLOSTRIDIUM BOTULINUM TYPE A TOXIN IN FECAL AND FOOD SAMPLES | Morvarid Shafiei | ۱۱:۴۵ الی ۱۲:۰۰ |

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| BIOSYNTHESIS OF 2-PHENYLETHANOL (ROSE-LIKE ODOR) BY PATHWAY ENGINEERING IN ESCHERICHIA COLI | Behrouz Mohammadi Nargesi | ۱۲:۰۰ الی۱۲:۱۵ |
| PLACKET-BURMAN DESIGN TO IMPROVE LACTIC ACID PRODUCTION FROM WHEY MEDIUM BY AN INDIGENOUS LACTOBACILLUS SP. | Bahram Vakhshour | ۱۲:۱۵ الی ۱۲:۳۰ |
| **نماز، نهار و استراحت** | | ۱۲:۳۰ الی ۱۴ |
| **هیئت رئیسه:** دکتر جعفر سلیمیان، دکتر مجتبی هدایتی چکوسری، دکتر سید علی میر حسینی، دکتر حمیده محمودزاده حسینی، دکتر راحله حلبیان | | |
| MONITORING OF BACTERIAL CONTAMINATION OF READY-TO- EAT FOOD SAMPLES AND FRESH PRODUCTS IN RESTAURANTS, IN YAZD, IRAN | Roqieh Sadat Razavi Mahmoodabadi | ۱۴ الی ۱۴:۱۵ |
| SHIGA TOXIN AND ITS EFFECT ON IMMUNE CELLS | Elham Sahebi | ۱۴:۱۵ الی ۱۴:۳۰ |
| ETHNO MEDICINAL PLANT: ASSESSMENT OF ANTIFUNGAL ACTIVITIES OF PUNICA GRANATUM PEEL AQUEOUS EXTRACT WITH AGAR DISK DIFFUSION METHOD AGAINST CANDIDA ALBICANS. | Mohammad Mahdi Zangeneh | ۱۴:۳۰ الی ۱۴:۴۵ |
| EVALUATION OF ANTIMICROBIAL ACTIVITIES OF SATUREJA HORTENSIS L. ESSENTIAL OIL AGAINST SOME FOODBORN PATHOGENIC AND SPOILAGE MICROORGANISMS | Mina Farahani | ۱۴:۴۵الی ۱۵:۰۰ |
| ISOLATION AND IDENTIFICATION OF LACTIC ACID BACTERIA FROM TRADITIONAL SOURDOUGH OF CHAHARMAHAL AND BAKHTIARI PROVINCE | Safoura Salahi | ۱۵:۰۰ الی ۱۵:۱۵ |

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| DISTRIBUTION OF TOP-EIGHT PATHOGENIC O-SEROGROUPS IN SHIGA TOXIN-PRODUCING ESCHERICHIA COLI (STEC) STRAINS ISOLATED FROM DIFFERENT ANIMAL SOURCES IN IRAN | Mahdi Askari Badouei | ۱۵:۱۵ الی ۱۵:۳۰ |
| ANTIBACTERIAL HYDROXYPROPYL METHYL CELLULOSE EDIBLE FILMS CONTAINING NANOEMULSIONS OF THYMUS DAENENSIS ESSENTIAL OIL FOR FOOD PACKAGING | Roya Moghimi | ۱۵:۳۰ الی ۱۵:۴۵ |
| EVALUATION OF MICROBIOLOGICAL QUALITY OF COMMON SPICES IN MASHHAD | Mohamad Khezri | ۱۵:۴۵ الی ۱۶:۰۰ |
| **پذیرایی و بازدید از پوسترها** | | ۱۶:۰۰الی ۱۶:۳۰ |

## سالن A

## چهار شنبه۸ /۹۶/۶

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| **هیئـت رئیسـه:** دکتـر شـهناز حلیمـی، دکتـر بهمـن میرزایـی، دکتـر امیـد پژنـد، دکتـر رویـا هژبـری ، دکتر سمیه دلفانی | | |
| ROLE OF SOMATIC ANTIGENS OF MARSHALLAGIA MARSHALLI ON TLR4 EXPRESSION IN SPLENOCYTES OF ASTHMATIC MICE | Amin Zakeri | ۱۰:۳۰ الی۱۰:۴۵ |
| SCREENING OF EXTRACELLULAR L-ASPARAGINASE PRODUCING BACTERIA FROM SOIL | Atefe Pourdadashi | ۱۰:۴۵ الی ۱۱:۰۰ |
| EVALUTION OF STAPHYLOCOCCUS AUREUS AND STAPHYLOCOCCUS EPIDERMIDIS ISOLATED FROM PATIENTS IN GILAN PROVINCE IN TERMS OF THERE ABILITY TO FORM BIOFILM WITH PHENOTYPIC AND GENOTYPIC METHODS | Masoud Pirali | ۱۱:۰۰ الی۱۱:۱۵ |
| STUDY OF SALMONELLA TYPHI APOPTOSIS EFFECT IN PANCREATIC CANCER CELL LINES BY MEASURING BAX GENE EXPRESSION VIA REAL TIME PCR | Adineh Khodavirdi pour | ۱۱:۱۵ الی ۱۱:۳۰ |
| SALINIVENUS IRANICUS AS A NEW SOURCE FOR ANTI-CANCER STEM CELL METABOLITES | Atefeh Safarpour | ۱۱:۳۰ الی۱۱:۴۵ |
| THE EFFECT OF SACCHAROMYCES CEREVISIAE ON EXPRESSION OF EXOTOXIN S AND PHOSPHOLIPASE C GENES IN PSEUDOMONAS AERUGINOSA | Maryam Mokari | ۱۱:۴۵ الی ۱۲:۰۰ |
| CLONING AND CYTOPLASMIC EXPRESSION OF HUMAN PROINSULIN ANALOGUE IN ESCHERICHIA COLI | Lale Feizi | ۱۲:۰۰ الی۱۲:۱۵ |
| ENHANCED IMMUNOGENICITY INDUCED BY ROTAVIRUS VP6 FUSED TO NSP4 PROTEIN IN MICE | Atefe Afchangi | ۱۲:۱۵ الی ۱۲:۳۰ |
| **نماز، نهار و استراحت** | | ۱۲:۳۰ الی : ۱۴:۰۰ |

**هیئت رئیسه:** دکتر سهیلا اژدری، دکتر غلامرضا زرینی، دکتر داوود کلانتر نیستانکی، دکترشیوا میرکلانتری، دکترمحمد رضا اسدی کرم

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| EVALUATION OF THE IMMUNOGENICITY EFFECT OF CHITOSAN NANOPARTICLES CONTAINING THE CAMP-SIALIDASE RECOMBINANT PROTEIN AS A PROPIONIBACTERIUM ACNES VACCINE CANDIDATE IN THE MICE MODEL | Parvin Zargham | ۱۴:۰۰ الی ۱۴:۱۵ |
| IMMUNOGENICITY OF A DNA VACCINE ENCODING AG85A-TB10.4 ANTIGENS FROM MYCOBACTERIUM TUBERCULOSIS | Roghayeh Teimourpour | ۱۴:۱۵ الی ۱۴:۳۰ |
| SELECTION, DESIGN, AND BIOINFORMATICS ANALYSIS OF THE PPS CHIMERIC PROTEIN AS A NEW VACCINE CANDIDATE AGAINST STREPTOCOCCUS PNEUMONIA | Hamed Abbasi Gravand | ۱۴:۳۰ الی ۱۴:۴۵ |
| | Hosein Ahmadi | ۱۴:۴۵الی ۱۵:۰۰ |
| EVALUATION OF IMMUNIZATION EFFECTS OF CLOSTRIDIUM PERFRINGENS TYPE D AND CLOSTRIDIUM SEPTICUM EPSILON-ALPHA FUSION CHIMERIC PROTEIN IN LABORATORY ANIMALS | Hamid Reza Sepehrifar | ۱۵:۰۰ الی ۱۵:۱۵ |
| CONSTRUCTION OF KILLED BUT METABOLICALLY ACTIVE UROPATHOGENIC ESCHERICHIA COLI STRAINS AS A VACCINE CANDIDATE FOR URINARY TRACT INFECTION | Zahra Jalili | ۱۵:۱۵ الی ۱۵:۳۰ |
| DESIGN AND SYNTHESIS OF THE MODIFIED DNA ENCODING PROINSULIN GLARGINE ANALOGUE BY OVERLAP EXTENSION PCR | Seyyedeh khadijeh Hosseini oula | ۱۵:۳۰ الی ۱۵:۴۵ |
| A NOVEL CANDIDATE VACCINE OF BRUCELLA: EVALUATION OF IMMUNITY IN BALB/C MICE | Abbas Abdollahi | ۱۵:۴۵ الی ۱۶:۰۰ |
| **پذیرایی و بازدید از پوسترها** | | ۱۶:۰۰الی ۱۶:۳۰ |

## سالن A

## پنج شنبه ۹ /۹۶/۶

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| **هیئت رئیسه:** دکتر مروت طاهری کلانی، دکتر ستاره سروش، دکتر فرانک رضایی، دکتر صدیقه جوادپور، دکتر مروارید شفیعی | | |
| IN SILICO DESIGN AND IN VITRO EXPRESSION OF MULTIEPITOPE SUBUNIT VACCINE FROM UROPATHOGENIC ESCHERICHIA COLI AGAINST URINARY TRACT INFECTIONS | Sara Hasanzadeh | ۸:۳۰ الی ۸:۴۵ |
| EVALUATE THE IMMUNOGENICITY OF CONJUGATED CAPSULAR TYPE III STREPTOCOCCUS AGALACTIAE WITH DIPHTHERIA TOXOID IN MICE AS A VACCINE CANDIDATE | Behzad Jamali | ۸:۴۵ الی ۹:۰۰ |
| ABSOLUTE REAL-TIME QUANTIFICATION PCR PROCEDURE FOR QUANTIFICATION OF INTESTINAL MICROBIOME IN HUMAN FECAL SAMPLES | Sama Rezasoltani | ۹:۰۰ الی ۹:۱۵ |
| COMPARISON OF THE GUT MICROBIAL COMMUNITY BETWEEN OBESE AND LEAN ADULTS IN AN IRANIAN POPULATION | Hanieh Sadat Ejtahed | ۹:۱۵ الی ۹:۳۰ |
| THE ANTI BACTERIAL EFFECT OF ZNO ON FOOD BACTERIA | Samira Arianfar | ۹:۳۰ الی ۹:۴۵ |
| STUDY OF MONOCLONAL ANTIBODIES PRODUCTION WITH HYBRIDOMA TECHNIQUES AGAINST OF VISCERAL LEISHMANIASIS | Ezzat Nourizadeh | ۹:۴۵ الی ۱۰:۰۰ |
| **پذیرایی و بازدید از پوسترها** | | ۱۰:۰۰ الی ۱۰:۳۰ |

| **هیئت رئیسه:** دکتر حسین صمدی کفیل، دکتر کیارش قزوینی، دکتر غلامرضا هاشمی تبار، دکتر احسان آرین ، دکتر مجید زارع بیدکی | | |
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| AN IN VITRO STUDY OF ANTIMICROBIAL AND ANTI-BIOFILM EFFECT OF PHOTO-THERMAL THERAPY BY NANOCHITOSAN-LOADED INDOCYANINE GREEN ON PSEUDOMONAS AERUGINOSA | Parizad Rezaie | ۱۰:۳۰ الی ۱۰:۴۵ |
| SEROLOGICAL STUDY OF Q FEVER IN PATIENTS WITH FEBRILE DISEASE IN THE KHORRAMABAD CITY USING IFA | Saba Baharvand | ۱۰:۴۵ الی ۱۱:۰۰ |
| LUMINESCENT VIBRIO FISCHERI AS A PLATFORM FOR BIOSYNTHESIS OF CUO NANOPARTICLES | Zahra Nakhaeepour | ۱۱:۰۰ الی ۱۱:۱۵ |
| INVESTIGATING THE EFFECTS OF ZINC OXIDE NANOPARTICLES BASED ON ZEOLITE AGAINST BIOFILM FORMATION OF ENTEROCOCCUS FAECALIS | Narjes Talaei | ۱۱:۱۵ الی ۱۱:۳۰ |
| FEASIBILITY STUDY OF PRODUCTION A CHOCOLATE CONTAINING BIFIDOBACTERIUM BREVE ENCAPSULATED BY CALCIUM ALGINATE AND RESISTANT MAIZ STARCH BY USING EMULSION TECHNIQUE AND EVALUATION OF ITS SURVIVAL | Nazanin alsadat Kheirkhahan | ۱۱:۳۰ الی ۱۱:۴۵ |
| EFFECT OF LACTOBACILLUS DELBRUECKII ON FETUIN A IN NORMAL AND STZ-INDUCED DIABETIC MICE | Reza Dolatyari eslami | ۱۱:۴۵ الی ۱۲:۰۰ |

## سالن B

## سه شنبه ۹۶/۶/۷

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| **هیئت رئیسه:** دکتر سعید اشراقی ، دکتر پروین حیدریه، دکتر اصغر شریفی، دکتر شبنم رضوی، دکتر سید سجاد خرم روز | | |
| MEASURING THE IMPACT OF SCROPHULARIA STRIATA IN PATIENTS WITH URINARY TRACT INFECTION | Shahriar Akbari | ۱۰:۳۰ الی ۱۰:۴۵ |
| TO STUDY THE EFFECT OF PROBIOTIC (BACILLUS SUBTILIS) ON THE SERUM GGT (GAMMA_GLUTAMYL TRANSFERASE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS | Reihane Ahmadi | ۱۰:۴۵ الی ۱۱:۰۰ |
| TO STUDY THE EFFECT OF PROBIOTIC (PROVITA) ON THE SERUM GGT (GAMMA_GLUTAMYL TRANSFERASE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS. | Fateme Kazemi Meyghani | ۱۱:۰۰الی۱۱:۱۵ |
| USE OF PROBIOITICS OF LACTOBACILLUS PARACASEI STRAINS TO DECREASE HYPEROXALURIA IN RATS | Rouhi Afkari | ۱۱:۱۵ الی ۱۱:۳۰ |
| EFFECTS OF LOCAL PROBIOTICS FROM IRAN ON PROLIFERATION OF MDA-231 AND MCF-7 BREAST CANCER CELL LINES | Mohadese Abdoli | ۱۱:۳۰ الی۱۱:۴۵ |
| INVITRO AND INVIVO CHOLESTEROL LOWERING PROPERTIES OF LACTOBACILLUS SPECIES ISOLATED FROM HUMAN MILK | Naheed Mojgani | ۱۱:۴۵ الی ۱۲:۰۰ |
| EVALUATING THE ANTIBACTERIAL ACTIVITY AND BACTERIOCIN LIKE SUBSTANCE, BLIS, PRODUCED BY INDIGENOUS LACTOBACILLUS CASEI STRAINS | Elham Norouzi | ۱۲:۰۰ الی۱۲:۱۵ |
| EFFECT OF SACCHAROMYCES CEREVISIAE ON EXPRESSION TOXIN GENES (LT AND ST) IN ENTEROTOXIGENIC ESCHERICHIA COLI (ETEC) | Maryam Kopayee | ۱۲:۱۵ الی ۱۲:۳۰ |

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| ۱۲:۳۰ الی ۱۴ | **نماز، نهار و استراحت** | |
| **هیئـت رئیسـه:** دکتـر سـید فضـل الله موسـوی ، دکتـر یوسـف یحیـی پـور، دکتـر رمضـان رجـب نیـا ، دکتر ایرج پاکزاد، دکتر افرا خسروی | | |
| ۱۴ الی ۱۴:۱۵ | Zahra Rafiei Atani | THE INHIBITORY EFFECTS OF THE CELL WALL OF LACTOBACILLUS REUTERI ON CELL PROLIFERATION IN THE COLORECTAL CANCER HCT-116 CELL LINE |
| ۱۴:۱۵ الی ۱۴:۳۰ | Mansooreh Hooshiyar | THE CRISPR-CAS9 TECHNOLOGY AND GENE THERAPY |
| ۱۴:۳۰ الی ۱۴:۴۵ | Farzaneh Farshdari | ANTI-HER2 SCFV EXPRESSION IN SHUFFLE HOST |
| ۱۴:۴۵الی ۱۵:۰۰ | Akram Zangeneh | MEDICINAL PLANT: STUDY ON ANTIFUNGAL EFFECTS OF STEVIA REBAUDIANA AQUEOUS EXTRACT AGAINST CANDIDA ALBICANS. |
| ۱۵:۰۰ الی ۱۵:۱۵ | Majid Zare Bidaki | INTRODUCING AND ASSESSING VIRTUAL REALITY (VR) AS A NEW TECHNOLOGY IN LEARNING THEORY AND PRACTICAL CONCEPTS OF MEDICAL MICROBIOLOGY AND IMPROVEMENT OF NON-COGNITIVE SKILLS |
| ۱۵:۱۵ الی ۱۵:۳۰ | Donya Nikaein | POTENTIAL APPLICATION OF NATURAL HONEY TO GROW IMMUNITY AGAINST INVASIVE ASPERGILLOSIS IN A MURINE MODEL |
| ۱۵:۳۰ الی ۱۵:۴۵ | Amjad Ahmadi | FREQUENCY OF NEISSERIA GONORRHOEAE GENITAL INFECTIONS IN PREGNANT WOMEN AND WOMEN WITH SPONTANEOUS ABORTION |
| ۱۵:۴۵ الی ۱۶:۰۰ | Saber Esmaeili | Q FEVER AMONG HUMAN AND ANIMAL IN IRAN; A SYSTEMATIC REVIEW AND META-ANALYSIS |
| ۱۶:۰۰الی ۱۶:۳۰ | **پذیرایی و بازدید از پوسترها** | |

## سالن B

## چهار شنبه۸ /۹۶/۶

| هیئت رئیسه : دکتر احمد خورشیدی، دکتر پروانه صفاریان، دکتر فاضل پور احمد ، دکتر علی جزایری مقدس، دکتر محمد خلیفه قلی | | |
|---|---|---|
| DETECTION OF ENTEROHEMORRHAGIC ESCHERICHIA COLI RELATED GENES IN ESCHERICHIA COLI STRAINS BELONGING TO B2 PHYLOGROUP ISOLATED FROM URINARY TRACT INFECTIONS IN COMBINATION WITH ANTIMICROBIAL RESISTANCE PHENOTYPES. | Hamid Staji | ۱۰:۳۰ الی ۱۰:۴۵ |
| PREVALENCE AND GENOTYPING OF HIGH RISK HUMAN PAPILLOMAVIRUS BY PCR ASSAY IN WOMEN USING LIQUID BASE PAP SMEAR | Masoomeh Rezanezhadi | ۱۰:۴۵ الی ۱۱:۰۰ |
| INVASIVE ASPERGILLOSIS AFTER LIVER TRANSPLANT SURGERY | Parisa Badiee | ۱۱:۰۰ الی ۱۱:۱۵ |
| GENETIC STUDY FOR THE ROLE AND PREDICTIVE CONSEQUENCE OF CERTAIN CYTOKINES IN HEPATITIS B IRAQI PATIENTS | Ali Malik Saad | ۱۱:۱۵ الی ۱۱:۳۰ |
| NEISSERIA GONORRHOEAE ENDOTOXIN AND SPLEEN'S MRNA SPLICING OF XBP-1 GENE IN C57 MICE | Atabak Nagheli | ۱۱:۳۰ الی ۱۱:۴۵ |
| MOLECULAR STUDY OF ANTI-ENDOTOXIN EFFECTS OF ENDOCRINE HORMONES IN C57 ANIMAL MODEL BASED ON THE FREQUENCY OF PHYSICAL PARAMETERES | Shadi Mousavi | ۱۱:۴۵ الی ۱۲:۰۰ |
| THE EFFECT OF THE PSEUDOMONAS AERUGINOSA LPS ON THE UNFOLDED PROTEIN RESPONSE (UPR) IN C57 MICE | Mahla Shahriyari | ۱۲:۰۰ الی ۱۲:۱۵ |

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| FIBRINOGEN AND MUCIN BINDING ACTIVITY OF EF0737, A NOVEL RECOMBINANT PROTEIN OF ENTEROCOCCUS FAECALIS | Samira Sabzi | ۱۲:۱۵ الی ۱۲:۳۰ |
| **نماز، نهار و استراحت** | | ۱۲:۳۰ الی ۱۴:۰۰ |
| هیئت رئیسه: دکتر پژواک خاکی، دکتر نادر مصوری، دکتر رضا خاشعی، دکتر احمد رضا جباری، دکتر سبحان غفوریان | | |
| QUALITY EVALUATION OF IDENTIFICATION OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS BASED ON THE EXPRESSION OF HLA, LUKED, SEI, AND HLG VIRULENCE GENES IN DIABETIC FOOT INFECTION SAMPLES IN MAZANDARAN | Hossein Rasouli | ۱۴:۰۰ الی ۱۴:۱۵ |
| STUDY RELATION OF HELICOBACTER PYLORI INFECTION AND MITOCHONDRIAL DNA COMMON MUTATION IN COLORECTAL CANCER | Fatemeh Asgari | ۱۴:۱۵ الی ۱۴:۳۰ |
| MOLECULAR EVALUATION OF RELATION CHLAMYDIA TRASHOMATIS INFECTION AND MTHFR C677T MUTATION IN EMBRYONIC ABORTION | Taraneh Abed | ۱۴:۳۰ الی ۱۴:۴۵ |
| MOLECULAR INVESTIGATION OF RELATION BETWEEN UREAPLASMA UREALYTICUM INFECTION AND MTHFR A1298C MUTATION IN HUMAN ABORTION | Mitra Porakbar | ۱۴:۴۵الی ۱۵:۰۰ |
| INVESTIGATION OF RELATIONSHIP BETWEEN HELICOBACTER PYLORI AND MITOCHONDRIAL MTDNA4977 DELETION IN CARDIOVASCULAR DISEASES | Roya Jahandar | ۱۵:۰۰ الی ۱۵:۱۵ |
| TOXIN ANTITOXIN SYSTEM AS AN ATTARACTIVE TARGET IN PATHOGENIC ENTEROCOCCUS FAECIUM AND ENTEROCOCCUS FAECALIS | Sara Soheily | ۱۵:۱۵ الی ۱۵:۳۰ |

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| DETECTION OF VIRULENCE GENES IN ENTEROCOCCUS FAECALIS AND ENTEROCOCCUS FAECIUM ISOLATED FROM CLINICAL SPECIMENS IN IRAN | Babak Asghari | ۱۵:۳۰ الی ۱۵:۴۵ |
| VIRULENCE GENE EXPRESSION ANALYSIS OF STAPHYLOCOCCUS AUREUS IN TREATMENT WITH THYMUS DAENENSIS L ESSENTIAL OIL | Aram Sharifi | ۱۵:۴۵ الی ۱۶:۰۰ |
| **پذیرایی و بازدید از پوسترها** | | ۱۶:۰۰الی ۱۶:۳۰ |

## سالن B

## پنج شنبه ۹ /۹۶/۶

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| **هیئـــت رئیســـه:** دکتـر علـی اکبـر شـعبانی، دکتـر محمـد حسـن شـیرازی، دکتـر عبـاس عبـداللهی، دکتر رمضانعلی عطایی، دکتر علی مهرابی توانا | | |
| A SYSTEMATIC REVIEW AND META-ANALYSIS OF COCKROACHES (INSECTA: BLATTARIA) CONTAMINATION TO MEDICALLY FUNGI | Hassan Nasirian | ۸:۳۰ الی ۸:۴۵ |
| MOLECULAR TYPING OF STAPHYLOCOCCUS AUREUS ISOLATES FROM PATIENTS, PERSONNEL AND SURFACES IN SHAHID MOTAHARI HOSPITAL BY SCCMEC AND AGR TYPING METHODS | Sara Abbasian | ۸:۴۵ الی ۹:۰۰ |
| THE FREQUENCY OF MYCOPLASMA PNEUMONIAE AMONG PATIENTS WITH ATYPICAL PNEUMONIA. | Maryam Arfaatabar | ۹:۰۰ الی ۹:۱۵ |
| EVALUATION OF SOME EPIDEMIOLOGICAL FACTORS OF CUTENESS ANTHRAX IN PATIENTS WERE ADMITTED TO THE HEALTH CENTERS IN MASHHAD FROM 2003 UNTIL 2013 | Hossein Mokhtari | ۹:۱۵ الی ۹:۳۰ |
| PRODUCTION OF MPT-64 RECOMBINANT PROTEIN FROM VIRULENT STRAIN OF MYCOBACTERIUM BOVIS | Maryam Mohammadi Tashkkori | ۹:۳۰ الی ۹:۴۵ |
| **بحث و تبادل و نظر** | | ۹:۴۵ الی ۱۰:۰۰ |
| **پذیرایی و بازدید از پوسترها** | | ۱۰:۰۰ الی ۱۰:۳۰ |

# فهرست پوسترهای

هجدهمین کنگره بین‌المللی میکروب شناسی ایران

# جدول زمانبندی ارائه پوسترها

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| P1-P111 | | | روز اول ساعت ۹:۴۵ -۱۱:۰۰ | |
| P1 | 3 | STUDY THE PREVALENCE AND THE ANTIBIOTIC SUSCEPTIBILITY PATTERN OF BACTERIAL AGENTS ISOLATED FROM PATIENTS WITH BURN WOUND INFECTION ADMITTED IN TO THE CLINIC OF KERMANSHAH | Shokofeh Bakhshi | Antibiotics Resistance |
| P2 | 4 | MUTATION OF OPRD GENE AND IMIPENEM RESISTANCE IN PSEUDOMONAS AERUGINOSA ISOLATES IN GUILAN PROVINCE | Hossein Motahhary Tashi | Antibiotics Resistance |
| P3 | 14 | PREVALENCE OF QNRA, QNRB, QNRS GENES IN FLUOROQUINOLONE RESISTANCE K.PENUMONIEA ISOLATED FROM HOSPITAL SAMPLES | Elahe Tajbakhsh | Antibiotics Resistance |
| P4 | 28 | DETECTION OF RESISTANCE PATTERN IN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS AND VANCOMYCIN-RESISTANT IN GHAEMSHAHR RAZI HOSPITAL AND SARI SHAHID ZARE HOSPITAL | Mohammad Movagharnezhad | Antibiotics Resistance |
| P5 | 30 | MOLECULAR DIAGNOSIS AND DETECTION OF THE ANTIBIOTIC RESISTANCE PATTERN IN METHICILLIN RESISTANT STAPHYLOCOCCUS ARUEUS(MRSA) ISOLATED FROM PATIENTS HOSPITALIZED IN RASHT HOSPITALS. | Seyedeh adeleh Pishvaee | Antibiotics Resistance |
| P6 | 34 | ASSESSMENT OF CONSUMPTION AND PUBLIC ATTITUDE ABOUT ANTIBIOTICS AND ANTIBIOTIC RESISTANCE IN MASHHAD AND QUCHAN | Reza Dehghan | Antibiotics Resistance |
| P7 | 41 | BACILLUS STRAINS PRODUCING BETA-LACTAMASE DETECTION IN HOSPITAL ENVIRONMENT USING ACIDOMETRIC TEST | Samaneh Rouhi | Antibiotics Resistance |

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| P8 | 56 | BACTERIOCIN FROM BACILLUS SUBTILIS AS A NOVEL DRUG AGAINST DIABETIC FOOT ULCER BACTERIAL PATHOGENS | Alireza Jahani | Antibiotics Resistance |
| P9 | 83 | FREQUENCY OF TYPE III SECRETION SYSTEM CYTOTOXIN-EXO T,EXOS GENES AMONG PSEUDOMONAS AERUGINOSA AND RESISTANSE OF ANTIBIOTICS IN BURN PATIENTS FROM ZARE HASPITAL- SARI | Parvaneh Rahbari | Antibiotics Resistance |
| P10 | 84 | A REVIEW ON VARIOUS ANTIBIOTIC RESISTANCE MECHANISMS IN ACINETOBACTER | Mortaza Janebifam | Antibiotics Resistance |
| P11 | 87 | FREQUENCY OF VARIOUS TYPES OF BETA-LACTAMASE ENZYMES IN ESCHERICHIA COLI STRAINS ISOLATED FROM URINE SAMPLES IN ALIABAD | Seyed asghar Hosseini | Antibiotics Resistance |
| P12 | 94 | DETECTION OF KLEBSIELLA PNEUMONIAE CARBAPENEMASE (KPC) GENE AMONG CLINICAL ISOLATES OF KLEBSIELLA PNEUMONIAE AT BANDAR ABBAS | Saeed Shoja | Antibiotics Resistance |
| P13 | 96 | STUDY THE EFFICACY OF ANTIMICROBIAL ACTIVITIES OF EIGHT CLINICALLY APPLIED DISINFECTANTS AGAINST CLINICAL ISOLATED OF ENTEROCOCCI AND PSEUDOMONAS AERUGINOSA | Maryam Hassan | Antibiotics Resistance |
| P14 | 115 | DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERNS IN SALMONELLA TYPHIMURIUM ISOLATED FROM POULTRY FLOCKS | Somayyeh Hosseinzadeh | Antibiotics Resistance |
| P15 | 142 | CLASS 1 INTEGRONS IN NON-CLONAL MULTIDRUGRESISTANT ACINETOBACTER BAUMANNII FROM IRAN, DESCRIPTION OF THE NEW BLAIMP-55 ALLELE IN IN1243 | Shakibaie Mohammad Reza | Antibiotics Resistance |

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| P16 | 143 | PREVALENCE OF CLASS 1, 2 AND 3 INTEGRONS AND BIOFILM FORMATION IN PSEUDOMONAS AERUGINOSA AND ACINETOBACTER BAUMANNII AMONG ICU AND NON-ICU PATIENTS | Shakibaie Mohammad Reza | Antibiotics Resistance |
| P17 | 145 | DETECTION OF CARBENICILLIN HYDROLYSING (CARB) TYPE OF ESBL ENZYME IN ACINETOBACTER BAUMANNII STRAINS ISOLATED FROM BACTERIMIC AND UTI PATIENTS | Shakibaie Mohammad Reza | Antibiotics Resistance |
| P18 | 156 | EVALUATION ANTI-ULCEROGENIC ACTIVITY OF EXTRACT OF MATRICARIA CHAMOMILLA AGAINST HLICOBACTER PYLORI :A REVIEW | Zahra moghimi | Antibiotics Resistance |
| P19 | 159 | THE EFFECT OF ALOE VERA EXTRACT BARBAD ON TWO URINARY TRACT INFECTIONS | Mohsen Karami | Antibiotics Resistance |
| P20 | 162 | FREQUENCY OF CARBAPENEM-RESISTANT KLEBSIELLA PNEUMONIAE (CRKP) ISOLOLATED FROM PATIENTS WHO REFERRED TO TALEGHANI HOSPITAL ABADAN- YEAR 2014 | SEYEDEH ZOHREH MOMENI | Antibiotics Resistance |
| P21 | 163 | EXTENDED-SPECTRUM B-LACTAMASE (CTX-M) IN ESCHERICHIA COLI ISOLATES FROM HEALTHY HUMAN FECAL IN RURAL- AREAS OF QAZVIN, IRAN | Shiva Taheri | Antibiotics Resistance |
| P22 | 169 | THE STUDY OF THE PREVALENCE OF SHV , CTXM AND PER BETALACTAMASE GENES IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII FROM THE SHAHID MOHAMMADI HOSPITAL IN BANDAR ABBAS. | Afsaneh Karmostaji | Antibiotics Resistance |

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| P23 | 173 | PREVALENCE OF SHV GENE IN PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS | Nahid Rahimifard | Antibiotics Resistance |
| P24 | 175 | PREVALENCE OF BLACTX-M GENE IN E.COLI ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS | Nahid Rahimifard | Antibiotics Resistance |
| P25 | 176 | ANTIBIOTIC RESISTANCE PATTERNS OF STAPHYLOCOCCUS AUREUS(MRSA) ISOLATED FROM WOUND | Nahid Rahimifard | Antibiotics Resistance |
| P26 | 177 | ANTIBIOTIC RESISTANCE PATTERNS OF PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS | Nahid Rahimifard | Antibiotics Resistance |
| P27 | 184 | STUDY OF PREVALENCE OF BROAD-SPECTRUM BETALACTAMASE IN KLEBSIELLA PNEUMONIA STRAINS ISOLATED OF PATIENTS AND DETERMINATION OF THEIR DRUG RESISTANCE PATTERN | Elham Jafari | Antibiotics Resistance |
| P28 | 187 | HIGH FREQUENCY OF QNRB GENE AMONG KLEBSIELLA PNEUMONIAE ISOLATES RESISTANCE TO QUINOLONE ANTIBIOTICS | Shiva Mirkalantari | Antibiotics Resistance |
| P29 | 188 | SURVEY OF THE PREVALENCE AND ANTIMICROBIAL SUSCEPTIBILITY OF ISOLATED MICROORGANISMS DETECTED FROM WOMEN GENITAL TRACT AFFECTED WITH PRETERM LABOR IN KERMAN AFZALIPOUR HOSPITAL | Soraya Sheikh bardsiri | Antibiotics Resistance |
| P30 | 191 | MOLECULAR MECHANISMS OF ANTIBACTERIAL DRUG RESISTANCE | Attabak Toofani millani | Antibiotics Resistance |

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| P31 | 195 | THE ANTAGONISTIC EFFECTS OF COMMERCIAL PROBIOTICS (KIDILACT,VITALACT,PROTEXIN) TO INHIBIT THE GROWTH OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS WITH AGAR WELL DIFFUSION METHOD | Mahsa Abbasi | Antibiotics Resistance |
| P32 | 196 | AN INVESTIGATION ON THE EFFECT OF COMMERCIAL PROBIOTICS (KIDILACT,VITALACT,PROTEXIN) ON THE MECA GENE EXPRESSION IN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS | Mahsa Abbasi | Antibiotics Resistance |
| P33 | 199 | MOLECULAR STUDY OF BRO-1 AND BRO-2 GENES IN MORAXELLA CATARRHALIS CAUSING RESPIRATORY INFECTIONS WITH MULTIDRUG RESISTANCE IN CLINICAL SPECIMENS AND DETERMINING ANTIBIOTIC RESISTANCE PATTERN IN KAZEROON CITY | Fariba Gohari behbahani | Antibiotics Resistance |
| P34 | 203 | MOLECULAR DETECTION OF KPC -PRODUCING KLEBSIELLA PNEUMONIAE ISOLATES IN SANANDAJ CITY, IRAN | PEGAH SHAKIB | Antibiotics Resistance |
| P35 | 207 | RELATION OF ANTIBIOTIC RESISTANCE IN DIABETIC AND NON-DIABETIC INPATIENTS WITH E.COLI URINARY TRACT INFECTION (UPEC) IN GORGAN | Hanieh Bagheri | Antibiotics Resistance |
| P36 | 208 | ASSESSMENT OF THE ANTIBIOFILM ACTIVITY OF A SYNTHETIC NORFLOXACIN AGAINST SOME PATHOGENIC BACTERIA | ZEINAB Taghavi rafsanjani | Antibiotics Resistance |
| P37 | 209 | INVESTIGATIONS OF ANTIMICROBIAL ACTIVITY OF SYNTHETIC CIPROFLOXACIN AGAINST FLUOROQUINOLONE-RESISTANT STAPHYLOCOCCUS AUREUS AND ESCHERICHIA COLI | ZEINAB Taghavi rafsanjani | Antibiotics Resistance |

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| P38 | 214 | PATTERN OF ANTIBIOTIC RESISTANCE IN ENTEROCOCCUS SPP. ISOLATED FROM URINARY TRACT INFECTIONS IN TEACHING HOSPITALS OF AHVAZ, IRAN | HAJAR HAMIDI | Antibiotics Resistance |
| P39 | 218 | ANTIMICROBIAL ACTIVITY OF SEED HYDROALCOHLIC EXTRACT OF RUMEX OBTUSIFOLIUS | Farahnaz Bineshian | Antibiotics Resistance |
| P40 | 219 | PREVALENCE OF METALOBETA-LACTAMASE PRODUCING PSEUDOMONAS AERUGINOSA STRAINS ISOLATED IN IRAN | Reza Azizian | Antibiotics Resistance |
| P41 | 224 | CARTWHEEL METHOD PHENOTYPIC SCREENING IN PRESENCE OF EFFLUX PUMP IN THE PSEUDOMONAS AERUGINOSA ISOLATED FROM SKIN INFECTIONS | Ali Rahmati | Antibiotics Resistance |
| P42 | 227 | EVALUATION ANTIMICROBIAL EFFECTS OF ALOE VERA EXTRACT ON ESCHERICHIA COLI BACTERIA WITH AGAR WELL DIFFUSION | MAHSA ZEINALPOOR | Antibiotics Resistance |
| P43 | 234 | HEALTHY BROILER AS A POTENTIAL THREAT FOR TRANSMISSION OF EXTENDED-SPECTRUM BETA-LACTAMASE GENES TO HUMAN POPULATION IN WEST OF IRAN | Elham Ahmadi | Antibiotics Resistance |
| P44 | 239 | ANTIMICROBIAL ACTIVITY OF NATURAL PRODUCTS FROM MEDICINAL PLANTS | Javad Sharifi Rad | Antibiotics Resistance |
| P45 | 246 | BIOFILM FORMATION OF P. AERUGINOSA CLINICAL ISOLATES AND RELATIONSHIP WHIT ANTIBIOTIC RESISTANCE PATERN. | Mobina Mahmoudi joibary | Antibiotics Resistance |
| P46 | 248 | IMIPENEM-RESISTANT PSEUDOMONAS AERUGINOSA IN IRAN; A SYSTEMATIC REVIEW AND META-ANALYSIS | Hamid Vaez | Antibiotics Resistance |

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| P47 | 249 | THE BIOINFORMATICS' STUDY OF MUTATION EFFECT ON EFFLUX PUMP REGULATORY PROTEIN (MEXR) IN PSEUDOMONAS AERUGINOSA | Hamid Vaez | Antibiotics Resistance |
| P48 | 250 | A RANDOMIZED CONTROLLED TRIAL OF TEA TREE OIL BODY WASH VERSUS CHLORHEXIDINE BODY WASH TO PREVENT COLONIZATION WITH METHICILLIN-RESISTANT STAPHYLOCCOCUS AUREUS IN PEDIATRIC UNIT OF LOGHMAN-E-HAKIM HOSPITAL | Soolmaz Rahbari | Antibiotics Resistance |
| P49 | 251 | AMINOGLYCOSIDE RESISTANCE IN CLINICAL AND ENVIRONMENTAL ISOLATES OF PSEUDOMONAS AERUGINOSA | Siamak Parsavash | Antibiotics Resistance |
| P50 | 254 | STUDY OF ANTI-BACTERIAL EFFECTS OF SEVEN CARBOTHIOHYDRAZIDE DERIVATIVES | Mohammad Hassan Moshafi | Antibiotics Resistance |
| P51 | 259 | STUDY OF THE FACTORS AFFECTING ON THE ANTIBIOTIC RESISTANCE FROM THE PERSPECTIVE OF PHARMACISTS WORKING IN PHARMACIES IN THE ISFAHAN CITY | Hooshmand Haji Khosravi | Antibiotics Resistance |
| P52 | 265 | MENTHA PULEGIUM ESSENTIAL OIL EFFECTS ON BIOFILM OF BACTERIA ISOLATED FROM PRESSURE ULCERS | Fatemeh Nouri | Antibiotics Resistance |
| P53 | 266 | EVALUATION OF ANTIBIOTIC RESISTANCE IN ENTEROBACTER AEROGENES STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN THE SUMMER AND FALL OF 1395 IN IMAM REZA HOSPITAL, BOJNORD, NORTH KHORASAN | Amir Azimian | Antibiotics Resistance |

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| P54 | 269 | EVALUATION OF ANTIBIOTIC RESISTANCE IN ESCHERICHIA COLI STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN IMAM REZA HOSPITAL, BOJNURD, IN SUMMER AND AUTUMN 1395 | Zahra AliAbadi | Antibiotics Resistance |
| P55 | 270 | ANTIMICROBIAL AND SYNERGISTIC EFFECT OF CELL FREE SUPERNATANT OF THE ISOLATED PENICILLIUM WITH PENICILLIN AGAINST ESCHERICHIA COLI | Samaneh Sedighi Khavidak | Antibiotics Resistance |
| P56 | 273 | DIFFERENTIATION OF METICILLIN-RESISTANT S. AUREUS (MRSA) FROM COAGULASE- NEGATIVE STAPHYLOCOCI (CONS) AND METICILLIN- SENSITIVE S. AUREUS (MSSA) BY MULTIPLEX-PCR METHOD | Effat Abassi montazeri | Antibiotics Resistance |
| P57 | 276 | STUDY OF ANTIBACTERIAL ACTIVITY OF FOUR DERMAL ENHANCERS AGAINST SIX BACTERIAL STRAINS | Arsalan Jahantighi | Antibiotics Resistance |
| P58 | 287 | QUORUM SENSING IN BACTERIA: A REVIEW OF ADVANCES OVER THE LAST HALF CENTURY | Ali Nemati | Antibiotics Resistance |
| P59 | 289 | RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS CLINICAL ISOLATES RESISTANT TO ANTI-TB DRUGS | Somaeyh Geravand | Antibiotics Resistance |
| P60 | 292 | EVALUATION OF ANTIMICROBIAL ACTIVITY OF ALCOHOLIC AND AQUEOUS EXTRACTS FROM COMMON HOP (HUMULUS LUPULUS) AND OAK (QUERCUS CASTANEIFOLIA) | Hossein Vazeh | Antibiotics Resistance |

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| P61 | 293 | FREQUENCY OF ANTISEPTIC RESISTANCE AMONG STAPHYLOCOCCUS AUREUS AND COAGULASE-NEGATIVE STAPHYLOCOCCI ISOLATED FROM A UNIVERSITY HOSPITAL IN CENTRAL IRAN | Hossein Vazeh | Antibiotics Resistance |
| P62 | 298 | THE IMPACT OF MUTATIONS IN TOPOISOMERASE GENES AND THE PLASMID-MEDIATED QUINOLONE RESISTANCE (PMQR) DETERMINANTS ON THE RESISTANCE TO FLUOROQUINOLONES IN KLEBSIELLA PNEUMONIAE | Alisha Akya | Antibiotics Resistance |
| P63 | 304 | EVALUATION OF PHENOTYPIC ACTIVITY OF EFFLUX PUMP IN MULTI –DRUG RESISTANT PSEUDOMONAS AERUGINOSA ISOLATES BY CARTWHEEL METHOD | Mahya Shahrabi farahani | Antibiotics Resistance |
| P64 | 320 | THE PATTERN OF THE DRUG RESISTANCE OF BACTERIA ISOLATED FROM URINARY TRACT INFECTIONS IN THE PATIENTS ADMITTED TO SHAHID GHAZI HOSPITAL OF SANANDAJ CITY | Javad Beheshtipour | Antibiotics Resistance |
| P65 | 329 | ANTIMICROBIAL EFFECT OF AQUEOUS EXTRACT OF BERBERIS VULGARIS FRUIT ON ESCHERICHIA COLI'S ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTION. | Amir Mohammadkhan | Antibiotics Resistance |
| P66 | 341 | PREVALENCE OF BLANDM-1-PRODUCING ESCHERICHIA COLI IN ASIA : A SYSTEMATIC REVIEW AND META-ANALYSIS | Bahareh Hajikhani | Antibiotics Resistance |
| P67 | 342 | INVESTIGATING THE ANTIBACTERIAL EFFECT OF URTICA DIOICA (NETTLE) EXTRACT ON MULTI-DRUG RESISTANT ACINETOBACTER STRAINS ISOLATED FROM PATIENTS IN ICU OF HAZRAT-E RASOOL AKRAM HOSPITAL IN TEHRAN DURING 2016-2017 | Sepideh Zeinali aghdam | Antibiotics Resistance |

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| P68 | 343 | FREQUENCY OF TETRACYCLINE RESISTANCE GENES (TET K,TETM, TETL AND TETO) IN STAPHYLOCOCCUS AUREUS ISOLATED FROM TWO HOSPITAL IN SHIRAZ OF IRAN. | Samin Alipoor | Antibiotics Resistance |
| P69 | 345 | AMINOGLYSIDE RESISTANCE (AME) GENES AMONG CLINICAL STAPHYLOCOCCUS AUREUS ISOLATED FROM HOSPITALS IN SHIRAZ IRAN | Samin Alipoor | Antibiotics Resistance |
| P70 | 347 | DETECTION AND CHARACTERIZATION OF SHIGELLA SPECIES ISOLATED FROM PATIENTS SUFFERING FROM DIARRHEA BY MOLECULAR METHODS AND CULTURE TECHNIQUES | MAHTAB ABDI | Antibiotics Resistance |
| P71 | 349 | INVESTIGATING THE ANTIBACTERIAL EFFECT OF ALLIUM HERTIFOLIUM (SHALLOT) EXTRACT ON MULTI DRUG RESISTANT (MDR) KLEBSIELLA STRAINS ISOLATED FROM PATIENTS IN ICU OF RASOOL AKRAM HOSPITAL IN TEHRAN DURING 2016-2017 | Mahsa Dadgar | Antibiotics Resistance |
| P72 | 350 | ASSESSMENT OF EPIDEMIOLOGIC AND ANTIBIOTIC-- RESISTANCE URINARY TRACT INFECTION IN PATIENTS WITH NOSOCOMIAL INFECTION IN SEYEDALSHOHADA HOSPITAL IN URMIA IN 1395 | Homeira Vafaei | Antibiotics Resistance |
| P73 | 351 | THE INACTIVATION EFFECT OF DINI GENE ON RESISTANCE TO CIPROFLOXACIN IN ESCHERICHIA COLI STRAINS | Sareh Mohammadi | Antibiotics Resistance |
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| P75 | 359 | ANTIBIOTIC SUSCEPTIBILITY PATTERNS OF KLEBSIELLA PNEUMONIAE STRAIN ISOLATED FROM URINARY SPECIMENS . | Fatemeh Eghbalpoor | Antibiotics Resistance |
| P76 | 364 | INVESTIGATION OF BLAIMP AND BLAVIM MEDIATED CARBAPENEM RESISTANCE IN ACINETOBACTER SPECIE | Farkhondeh Salehshoshtari | Antibiotics Resistance |
| P77 | 370 | A STUDY OF PANTON-VALENTIN, MECA AND SCCMECV IN THE METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) FROM THE PATIENTS SAMPLES OF HOSPITALS OF RASHT IN IRAN | Houra Pourghafar | Antibiotics Resistance |
| P78 | 371 | SURVEY PREVALENCE AMINOGLYCOSIDE RESISTANCE GENES AMONG ACINETOBACTER BAUMANNII STRAINS ISOLATED FROM BURN PATIENTS IN TEHRAN, IRAN | MAHTAB ABDI | Antibiotics Resistance |
| P79 | 372 | IN-VITRO ANTIMICROBIAL AND ANTI-BIOFILM FORMATION ACTIVITY OF NEW BENZISOTHIAZOLES CONTAINING A B-LACTAM RING | Zahra fahimeh alsadst Mortazavi | Antibiotics Resistance |
| P80 | 373 | IN-VITRO ANTI-BIOFILM FORMATION ACTIVITY OF 4-BENZYLIDENE-2-METHYL-OXAZOLIN-5-ONE | Zahra fahimeh alsadst Mortazavi | Antibiotics Resistance |
| P81 | 375 | ANTIBIOTIC RESISTANCE AND BIOFILM FORMATION OF ISOLATED ACINETOBACTER BAUMANNII FROM CLINICAL INFECTIONS IN ZAHEDAN , IRAN | Mahnaz Sabbaghi | Antibiotics Resistance |
| P82 | 382 | ANTIBIOTIC RESISTANCE OF S. AUREUS AND S.INTERMEDIUS TO METHICILLIN | Zahra Jahanshiri | Antibiotics Resistance |
| P83 | 392 | ANTIBACTERIAL PROPERTIES AND CYTOTOXIC EFFECT OF A NOVEL SYNTHETIC PEPTIDE DERIVED FROM BACTERIAL PEPTIDE MICROCIN J25 | Maryam Mazaheri Tehrani | Antibiotics Resistance |

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| P84 | 395 | IDENTIFICATION OF CCR CASSETTE GENES IN CLINICAL ISOLATES OF STAPHYLOCOCCUS AUREUS AND TO SIGNIFY THE ASSOCIATION OF THE PRESENCE OF THE ALLELES WITH MULTI-DRUG RESISTANT STRAINS | Mahsa Vaafee far | Antibiotics Resistance |
| P85 | 404 | MOLECULAR CHARACTERIZATION AND PHYLOGENETIC ANALYSES OF NEURAMINIDASE GENE SEGMENT (NA) IN A/H1N1 INFLUENZA VIRUS ISOLATES CIRCULATING IN IRAN 2014 | Zahra Molavi | Antibiotics Resistance |
| P86 | 416 | PHYTOCHEMICAL SCREENING AND EVALUATION OF IN VITRO ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF THE INDIGENOUS MEDICINAL PLANT NORTH OF IRAN | Fateme Aliabadi | Antibiotics Resistance |
| P87 | 419 | PSEUDOMONAS AERUGINOSA AND ACINETOBACTER BAUMANNII ISOLATES ANTAGONISTIC EFFECTS OF ANTIBIOTICS EXTENDED-SPECTRUM B- LACTAMASE ENZYME | Farid Tarafdar | Antibiotics Resistance |
| P88 | 423 | DETECTION OF QNRS GENE IN ANTIBIOTIC RESISTANT SALMONELLA ENTERICA STRAINS | Shirin Malemir | Antibiotics Resistance |
| P89 | 436 | EVALUATION OF ANTIBACTERIAL EFFECT OF ALLIUM SATIVUM ALCOHOLIC EXTRACT ON EXTENDED-SPECTRUM BETA-LACTAMASE(ESBL) PRODUCING STRAINS OF E.COLI ISOLATED FROM UTI IN TABRIZ | Mojtaba Najafi farid | Antibiotics Resistance |
| P90 | 440 | A SARVEY FOR ANTIMICROBIAL RESISTANCE PATTERNS OF ACINETOBACTER CLINICAL ISOLATES IN ZAHEDAN HOSPITALS 2017 | Mohammad Dehvari | Antibiotics Resistance |

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| P91 | 451 | A REVIEW OF DRUG RESISTANT TUBERCULOSIS IN IRAN | Sara Lotfi | Antibiotics Resistance |
| P92 | 458 | ISOLATION AND SCREENING OF ACTINOBACTERIA WITH POLYMYXIN RESISTANT REDUCING ACTIVITY AGAINST ACINETOBACTER BAUMANNII | SEYEDEH AREZOO MANIEE | Antibiotics Resistance |
| P93 | 486 | PHENOTYPIC AND GENOTYPIC EVALUATION OF DRUG RESISTANCE PATTERN IN STAPHYLOCOCCUS AREUS ISOLATED FROM CLINICAL SAMPLES | Sahereh Amiri | Antibiotics Resistance |
| P94 | 487 | ANTIBIOTIC SUSCEPTIBILITY PATTERN AND THE PREVALENCE OF STAPHYLOCOCCUS AUREUS ISOLATED FROM SKIN AND SOFT TISSUE IN TEHRAN RAZI SKIN HOSPITAL (2014-15) | Zeinab Faghee | Antibiotics Resistance |
| P95 | 506 | EVALUATION OF THE EFFECT OF SMOKE OF ANBAR NASARA (DONKEY DUNG) EXTRACT ON PSEUDOMONAS AERUGINOSA. | Elnaz Dehdashtian | Antibiotics Resistance |
| P96 | 516 | MOLECULAR INVESTIGATION OF AAC(3)-II AND AAC(6')-IB GENES AMONG KLEBSIELLA PNEUMONIAE ISOLATES WITH AMINOGLYCOSIDE RESISTANCE PHENOTYPE | Shiva Mirkalantari | Antibiotics Resistance |
| P97 | 525 | PREVALENCE AND ANTIBIOTIC RESISTANCE PATTERNS IN CLINICAL ISOLATES OF PSEUDOMONAS AERUGINOSA IN TEHRAN, IRAN | Arezoo sadat Mahmudi jezeyi | Antibiotics Resistance |
| P98 | 527 | MOLECULAR DETECTION OF CLASS I AND CLASS II INTEGRON AMONG KLEBIELLA PNEUMONIA STRAINS ISOLATED FROM URINARY TRACT INFECTIONS | Shiva Mirkalantari | Antibiotics Resistance |

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| P99 | 530 | ISOLATION AND IDENTIFICATION OF MARINE ACTINOBACTERIA EXTRACTS FOR ANTI-BIOFILM ACTIVITY AGAINST STAPHYLOCOCCUS AUREUS | Faezeh Almasi | Antibiotics Resistance |
| P100 | 532 | DETECTION OF ANTIBIOTIC RESISTANCE GENES IN PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS ADMITTED TO AZAD UNIVERSITY TEACHING HOSPITALS, TEHRAN, IRAN. | Fahim Lalehzari | Antibiotics Resistance |
| P101 | 551 | ANTIBIOTIC RESISTANCE ACINETOBACTER ISOLATED FROM PATIENTS ICU AT BAHONAR IN KERMAN AND BIOFILM FORMATION IN THEM | Narges Ahani | Antibiotics Resistance |
| P102 | 562 | DETERMINING THE PATTERN OF ANTIBIOTIC RESISTANCE OF STAPHYLOCOCCUS AUREUS STRAINS IN SAMPLES OF TABRIZ HOSPITAL | Sajjad Jamali | Antibiotics Resistance |
| P103 | 566 | DETERMINING THE PATTERN OF ANTIBIOTIC RESISTANCE OF SHIGELLA SPECIES IN PATIENTS WITH ACUTE DIARRHEA IN TABRIZ | Sajjad Jamali | Antibiotics Resistance |
| P104 | 571 | ANTIBIOTIC RESISTANCE PATTERN OF ESCHERICHIA COLI CAUSE URINARY TRACT INFECTIONS | Sajjad Jamali | Antibiotics Resistance |
| P105 | 577 | EMERGENCE OF A MULTI-DRUG RESISTANT CLOSTRIDIUM DIFFICILE IN TEHRAN | Akram Baghani | Antibiotics Resistance |
| P106 | 581 | ISOLATION OF STAPHYLOPHAGE WHICH LYSES METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS | Zhaleh Gholami | Antibiotics Resistance |

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| P107 | 590 | PREVALENCE OF ANTIBIOTIC RESISTANCE PATTERNS AND INCIDENCE OF BROAD SPECTRUM BETA LACTAMASES IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII IN TEHRAN, IRAN | Kiana Kazemian | Antibiotics Resistance |
| P108 | 591 | PREVALENCE AND ANTIBIOTIC RESISTANCE PATTERNS OF BACTERIAL ISOLATES FROM POSITIVE BLOOD CULTURE OF HOSPITALIZED PATIENTS IN SHARIATI HOSPITAL, TEHRAN. | Azade Vahedi | Antibiotics Resistance |
| P109 | 593 | SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL ACTIVITY OF FUNCTIONALIZATION ZNO NANOPARTICLES BY THIOSEMICARBAZONE (ZNO/TSCS) AGAINST STAPHYLOCOCCUS AUREUS NOSOCOMIAL PATHOGENIC BACTERIUM | Armin Nejabatdoust | Antibiotics Resistance |
| P110 | 611 | FREQUENCY OF AMP-C GENE IN STRAINS OF PSEUDOMONAS AERUGINOSA ISOLATED FROM WOUND | Nahid Rahimifard | Antibiotics Resistance |
| P111 | 615 | IN VITRO INHIBITORY EFFECT OF ALCOHOLIC EXTRACT OF VACCINIUM ARCTOSTAPHYLOS ON MULTIDRUG RESISTANCE KLEBSIELLA STRAINS ISOLATED FROM CLINICAL SPECIMENS IN KARAJ | Azam Haddadi | Antibiotics Resistance |
| P112-P222 | | | روز اول ساعت ۱۱:۱۵-۱۲:۳۰ | |
| P112 | 616 | A PAN DRUG-RESISTANT PATIENTS WITH INTRAVENTRICULAR EXTENSION OF HEMORRHAGE (IVH): A CASE REPORT IN BESAT HOSPITAL, SANANDAJ, IRAN | Nooshin Abdolmaleki | Antibiotics Resistance |

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| P113 | 617 | IN VITRO INHIBITORY EFFECT OF ALCOHOLIC AND AQUEOUS VACCINIUM EXTRACTS ON AMPC BETA-LACTAMASE PRODUCING ESCHERICHIA COLI STRAINS ISOLATED FROM CLINICAL SPECIMENS IN KARAJ | Azam Haddadi | Antibiotics Resistance |
| P114 | 624 | THE PREVALENCE OF MEX E,MEX F GENES AMONG MULTI –DRUG RESISTANCE PSEUDOMONAS AERUGINOSA ISOLATES | Mahshid Pazouki | Antibiotics Resistance |
| P115 | 625 | IN-VITRO EVALUATION OF THE ANTIMICROBIAL ACTIVITY OF AQUEOUS, HYDROALCOHOLIC AND ALCOHOLIC EXTRACTS OF LEAVES AND STEM OF DAPHNE MUCRONATA ON THE GROWTH OF ORAL BACTERIA | Hassan Mahmoudi | Antibiotics Resistance |
| P116 | 629 | EVALUATION OF ANTIBACTERIAL ACTIVITY OF SOME NEWLY SYNTHESIZED DERIVATIVES OF PYRANOPYRAZOLE, PYRAZOLO[1,2-B]PHTALAZINE AND BIS-PYRAZOLE | Masoud Hamidi | Antibiotics Resistance |
| P117 | 632 | IN-VITRO EVALUATION OF THE ANTIMICROBIAL ACTIVITY OF AQUEOUS, HYDROALCOHOLIC AND ALCOHOLIC EXTRACTS OF LEAVES AND STEM OF DAPHNE MUCRONATA ON THE GROWTH OF ORAL BACTERIA | Kolsoom Shirzadi Karamolah | Antibiotics Resistance |
| P118 | 636 | STUDY ANTIMICROBIAL ACTIVITY OF DIFFERENT EXTRACTS OF DAPHNE OLEOIDES ON AEROBIC BACTERIA CAUSING ORAL INFECTION | Fatemeh Mosavie | Antibiotics Resistance |

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|---|---|---|---|---|
| P119 | 642 | STUDY EFFECT ANTIMICROBIAL OF AQUEOUS AND ALCOHOLIC EXTRACT PORTULACA OLERACEA ON BACTERIA ESCHERICHIA COLI, PSEUDOMONAS AEROGINOSA, STAPHYLOCOCCUS AUREUS, KLEBSIELLA PNEUMONIA, ENTEROBACTER AERUGINOS. | Mozhgan Abodarda | Antibiotics Resistance |
| P120 | 644 | MUTATIONAL ANALYSIS OF RNA POLYMERASE B SUBUNIT IN VARIOUS ESCHERICHIA COLI STRAINS RESISTANT TO RIFAMPIN AND CIPROflOXACIN | Sayyede Marzieh Nourbakhsh rezaei | Antibiotics Resistance |
| P121 | 645 | THE MUTATION ASSAY IN UMUC– MUTANTS OF ESCHERICHIA COLI RESISTANCE TO CIPROFLOXACIN | Sayyede Marzieh Nourbakhsh rezaei | Antibiotics Resistance |
| P122 | 651 | ANTIBACTERIAL ACTIVITY OF ARTEMISIA DRACUNCULUS ESSENTIAL OIL ON MULTIDRUG RESISTANT E. COLI ISOLATED FROM FOODS | Reza Sharafati chaleshtori | Antibiotics Resistance |
| P123 | 654 | MINIMUM INHIBITORY CONCENTRATION OF ESSENTIAL OIL OF THREE THYMES ON E. COLI STRAIN WITH INCREASED PUMP ACTIVITY | Sakineh Yousofvand | Antibiotics Resistance |
| P124 | 655 | SYNERGISTIC EFFECT OF GREEN TEA WITH ANTIFUNGAL DRUGS ON ASPERGILLUS SPECIES | Farnoosh Sarkhani moghaddam | Antibiotics Resistance |
| P125 | 656 | ANTIBACTERIAL EFFICACY OF FE3O4-AG NANOPARTICLES BIOSYNTHESIS BY SCENEDESMUS OBLIQUUS ALGAE EXTRACT AND ITS EFFECT ON MULTIPLE DRUG-RESISTANT OF PSEUDOMONAS AERUGINOSA STRAINS | Somayeh Hadad shahrestani | Antibiotics Resistance |

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|---|---|---|---|---|
| P126 | 659 | DETERMINATION OF ANTIBIOTIC RESISTANCE PROFILE AND MULTI-DRUG RESISTANCE (MDR) STRAINS OF UROPATHOGENIC ESCHERICHIA COLI ISOLATED FROM URINARY TRACT INFECTION | Davood Maleki | Antibiotics Resistance |
| P127 | 666 | COMPARISON OF ANTIBACTERIAL EFFECTS OF SATUREJA MACRANTHA'S ESSENTIAL OIL WITH ALCOHOLIC EXTRACT OF PEGANUM HARMALA IN GRAM-NEGATIVE AND GRAM-POSITIVE BACTERIA | Behrooz Shokouhi | Antibiotics Resistance |
| P128 | 667 | EFFECTS OF A TRIPLEX MIXTURE OF ROSEMARY, CUMIN AND CINNAMON ESSENTIAL OIL ON ESCHERICHIA COLI AND PSEUDOMONAS AERUGINOSA BACTERIA | Behrooz Shokouhi | Antibiotics Resistance |
| P129 | 668 | STUDY OF ANTIBACTERIAL EFFECTIVENESS OF ALLIUM HIRTIFOLIUM EXTRACT ON MULTI-DRUG RESISTANT ACINETOBACTER STRAINS | Sepideh Zeinali aghdam | Antibiotics Resistance |
| P130 | 673 | GROWTH CONTROL OF RESISTANT STRAIN OF PSEUDOMONAS AERUGINOSA ISOLATED FROM CYSTIC FIBROSIS PATIENT BY ESSENTIAL OIL OF THYME | Marjan Salehi | Antibiotics Resistance |
| P131 | 685 | EVALUATION THE SHIKONIN EFFECT ON DERMATOPHYTIC FUNGI | Azar Sabokbar | Antibiotics Resistance |
| P132 | 688 | ANTIBIOTIC RESISTANCE PATTERNS IN STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN MARAND, IRAN | Nazila Imeni | Antibiotics Resistance |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P133 | 689 | PREPARATION AND CHARACTERIZATION ZNO NANOPARTICLES COATED BY CHITOSAN-LINOLEIC ACID ; FUNGAL GROWTH AND BIOFILM ASSAY | Maryam Roudbary | Antibiotics Resistance |
| P134 | 690 | EVALUATION OF LOW LEVEL DISINFECTANT ANTIMICROBIAL ACTIVITY UNDER CLEAN AND SEMI CLEAN CONDITIONS | Saeedi Elahe | Antibiotics Resistance |
| P135 | 694 | A REVIEW ON THE ANTIMICROBIAL EFFECT OF EXTRACTS OF MEDICINAL PLANTS | Nazila Imeni | Antibiotics Resistance |
| P136 | 700 | INVESTIGATION OF ANTIMICROBIAL PATTERN OF UROPATHOGENS ISOLATED FROM PREGNANT WOMEN IN KERMAN | Sima Pooyan | Antibiotics Resistance |
| P137 | 702 | SURVEY OF DIFFERENT ANTIBIOTIC SENSITIVITY IN YERSINIA RUCKERI AND STREPTOCOCCUS INIAE BACTERIA'S INFECTION FROM GOLD FISH (CARASSIUSCARASSIUS) BREEDING UNITS OF TABRIZ CITY | Yasin Shafipour | Antibiotics Resistance |
| P138 | 703 | REPORT OF AEROMONASHYDROPHILA ZOONOTIC BACTERIA FROM RED-EARED SLIDER TURTLE (TRACHEMYS SCRIPTA) INURMIA CITY | Yasin Shafipour | Antibiotics Resistance |
| P139 | 704 | REPORT OF AEROMONASHYDROPHILA FROM ORNAMENTAL FISH BREEDING UNITS(HEROS SEVERUS) OF THE URMIA CITY | Yasin Shafipour | Antibiotics Resistance |
| P140 | 706 | STUDY OF ANTIBACTERIAL EFFECT OF URTICA EXTRACT ON MULTI DRUG RESISTANT (MDR) KLEBSIELLA STRAINS | Mahsa Dadgar | Antibiotics Resistance |

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|---|---|---|---|---|
| P141 | 708 | INVESTIGATION ANTIMICROBIAL ACTIVITY OF ALGAE EXTRACT OF LAURENCIA CASPICA ON PATHOGENIC BACTERIA RESISTANT TO ANTIBIOTICS | Atefeh Ghanbari | Antibiotics Resistance |
| P142 | 709 | PREVALENCE OF EXTENDED-SPECTRUM B-LACTAMASES (ESBLS) IN ENTROBACTER CLOACAE ISOLATED FROM HOSPITALIZED PATIENTS IN IMAM REZA HOSPITAL IN KERMANSHAH, IRAN, 2017. | Soroush Borji | Antibiotics Resistance |
| P143 | 715 | OCCURRENCE OF KPC AND OXA-48 GENES AMONG KLEBSIELLA PNEUMONIAE ISOLATED FROM CLINICAL SPECIMENS IN KHORRAMABAD HOSPITALS, IRAN | Gholamreza Goudarzi | Antibiotics Resistance |
| P144 | 716 | ANTIMICROBIAL ACTIVITY AQUEOUS, ETHYL ACETATE AND ETHANOLIC EXTRACTS OF PLEUROTUS SAJOR-CAJO MUSHROOM IN IRAN | Marzieh Sepehri | Antibiotics Resistance |
| P145 | 721 | CO-RESISTANCE AMONG PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM HOSPITALIZED PATIENTS | Jalal Mardaneh | Antibiotics Resistance |
| P146 | 726 | ANTI-BACTERIAL ACTIVITY OF PROBIOTIC LACTOBACILLUS CASEI SUPERNATANT AGAINST MDR CLINICAL ACINETOBACTER STRAINS ISOLATED FROM VENTILATOR. | Mitra Kohandel | Antibiotics Resistance |
| P147 | 727 | EVALUATION OF ANTI-BACTERIAL ACTIVITY OF LACTOBACILLUS REUTERI SUPERNATANT AGAINST MULTIDRUG RESISTANT KLEBSIELLA STRAINS | Parnian Nouri | Antibiotics Resistance |
| P148 | 728 | EVALUATION DRUG OF RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS ISOLATED FROM TABRIZ HOSPITAL | Behzad Jamali | Antibiotics Resistance |

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|---|---|---|---|---|
| P149 | 729 | ANTIBIOTIC RESISTANCE PATTERNS OF SALMONELLA TYPHIMURIUM ISOLATED FROM SHARIATI HOSPITAL IN TEHRAN | Behzad Jamali | Antibiotics Resistance |
| P150 | 730 | ANTIBIOTIC RESISTANCE PATTERNS OF PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM IMAM REZA HOSPITAL, URMIA, IRAN | Behzad Jamali | Antibiotics Resistance |
| P151 | 731 | THE PATTERN OF DRUG RESISTANCE IN ESCHERICHIA COLI STRAINS ISOLATED FROM IMAM REZA HOSPITAL, URMIA, IRAN | Behzad Jamali | Antibiotics Resistance |
| P152 | 738 | METALLO B-LACTAMASE GENES OF PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM MEMBRANES OF HOUSEHOLD WATER FILTER SYSTEMS IN AHVAZ CITY | Sara Mombeini | Antibiotics Resistance |
| P153 | 743 | THE STUDY OF THE SPREAD OF ERMA AND ERMB GENES IN ISOLATED ENTEROCOCCUS FAECALIS RESISTANT TO ERYTHROMYCIN, CLARITHROMYCIN AND CLINDAMYCIN PREPARED FROM IMAM KHOMEINI HOSPITAL IN BOROUJERD | Saeedeh Veyskarami | Antibiotics Resistance |
| P154 | 746 | STUDY OF PREVALENCE VAN A, VAN B, VAN C1, VAN C2 AND VAN C3 GENES IN THE ENTEROCOCCUS FEACALIS | Maryam Hossini | Antibiotics Resistance |
| P155 | 747 | MIC DETERMINATION OF ZOUSH OINTMENT ON PSEUDOMONAS AERUGINOSA | Maryam Meskini | Antibiotics Resistance |
| P156 | 748 | EVALUATE THE DISC DIFFUSION METHOD OF ZOUSH OINTMENT AGAINST PSEUDOMONAS AERUGINOSA | Maryam Meskini | Antibiotics Resistance |
| P157 | 749 | THE ANTIBACTERIAL EFFECTS OF LYCOPERSICONESCULENTUM MILL EXTRACT AGAINST FOUR SPECIES OF GASTROINTESTINAL BACTERIAL PATHOGENS | Marzie Shamshirgaran | Antibiotics Resistance |

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|---|---|---|---|---|
| P158 | 752 | ADER-ADES MUTATIONS AND OVEREXPRESSION OF THE ADEABC EFFLUX SYSTEM IN CIPROFLOXACIN-RESISTANT ACINETOBACTER BAUMANNII CLINICAL ISOLATES | Fereshteh Izadi | Antibiotics Resistance |
| P159 | 753 | STUDY THE EXPRESSION OF THE RECF GENE IN ESCHERICHIA COLI DINI-MUTANTS | Marzieh sadat Moosavi | Antibiotics Resistance |
| P160 | 754 | GENOMIC DIVERSITY AND FREQUENCY OF CLASS 1 & 2 INTEGRONS IN MULTIDRUG-RESISTANT STRAINS OF ACINETOBACTER BAUMANNII ISOLATED FROM ICU IN WEST OF IRAN | Mahsa Dastranj | Antibiotics Resistance |
| P161 | 755 | MANAGE OF ANTIBIOTIC RESISTANCE IN E.COLI ISOLATES FROM URINARY INFECTIONS | Reyhaneh Aminnezhad | Antibiotics Resistance |
| P162 | 759 | DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERNS OF ORNITHOBACTERIUMRHINOTR ACHEALESTRAINS ISOLATED FROM POULTRY INDUSTRY IN IRAN BY DISC DIFFUSION AND MINIMUM INHIBITORY | Mahnaz Babakhani | Antibiotics Resistance |
| P163 | 764 | PREVALENCE OF FACTORS CAUSING URINARY TRACT INFECTION IN PATIENTS REFERRED TO IMAM KHOMEINI HOSPITAL IN 2016 SHIRVAN | Moein Hamidi hesari | Antibiotics Resistance |
| P164 | 768 | ANTI E.COLI ACTIVITY OF HERBAL MEDICINES: A SYSTEMATIC LITERATURE REVIEW | Faranak Rezaei | Antibiotics Resistance |
| P165 | 778 | WOUND HEALING EFFECT OF TEA TREE OIL ON METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) : AN ANIMAL STUDY | Fatemeh sadat Musavi | Antibiotics Resistance |

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|---|---|---|---|---|
| P166 | 779 | INVESTIGATING THE RESTORATIVE AND ANTIBACTERIAL EFFECTS OF HONEY, ROYAL JELLY AND PROPOLIS ON MALE WISTAR SKIN BURNS. | Homeira Asadi | Antibiotics Resistance |
| P167 | 785 | EVALUATION OF B-LACTAMASE GENES OF BLA IMP, BLA VIM IN PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM EDUCATIONAL HOSPITALS OF ZAHEDAN | Ziaulhagh Ghazi | Antibiotics Resistance |
| P168 | 786 | THE EFFECT OF COMMON ANTIBIOTICS ACCORDING TO CLSI STANDARD FOR RESISTANCE AND MICROBIAL SUSCEPTIBILITY TESTING OF CLINICAL PSEUDOMONAS AERUGINOSA STRAINS | Ziaulhagh Ghazi | Antibiotics Resistance |
| P169 | 787 | FREQUENCY OF BLA TEM AND BLA SHV GENES IN ESBLS PRODUCING PSEUDOMONAS AERUGINOSA STRAINS AND DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERN IN BURN WASTES OF ZAHEDAN CITY | Mahmood Sanjary | Antibiotics Resistance |
| P170 | 788 | DETERMINATION OF MIC IN CLINICAL ISOLATES OF PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS ADMITTED TO EDUCATIONAL HOSPITALS IN ZAHEDAN (1395-96) | Mahmood Sanjary | Antibiotics Resistance |
| P171 | 792 | ANTIBACTERIAL ACTIVITY OF METHANOLIC PUNICA GRANATUM (POMEGRANATE) PEEL EXTRACT AGAINST ORAL BACTERIA | Mohammad Mehdi Attarpour Yazdi | Antibiotics Resistance |
| P172 | 795 | ISOLATION OF ATOPOBIUM VAGINAE FROM PATIENTS WITH VAGINOSIS IN TONEKABON COUNTY | Khadijeh Daj liry | Antibiotics Resistance |

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| P173 | 797 | COMBINATION THERAPY OF FLUCONAZOLE/AMPHOTERICI N B AGAINST FLUCONAZOLE RESISTANT CANDIDA ALBICANS | Sara Neamati | Antibiotics Resistance |
| P174 | 798 | THE ANTIFUNGAL INFLUENCE OF FLUCONAZOLE AND AMPHOTERICIN B IN COMBINATION AND SINGLY ON THE HWP1 GENE EXPRESSION OF FLUCONAZOLE- RESISTANT CANDIDA ALBICANS BIOFILM | Sara Neamati | Antibiotics Resistance |
| P175 | 800 | ANTIMICROBIAL RESISTANT PATTERN IN UROPATHOGENIC E.COLI STRAIN ISOLATED FROM INPATIENT IN AL-ZAHRA HOSPITAL IRAN-ISFAHAN | Samaneh alsaddat Mirpour | Antibiotics Resistance |
| P176 | 802 | EVALUATION OF PREVALENCE AND ANTIMICROBIAL RESISTANCE PATTERN OF URINARY TRACT INFECTIONS IN THE EAST AZERBAIJAN PROVINCE OF IRAN | Ramin Abri | Antibiotics Resistance |
| P177 | 804 | PHENOTYPIC AND MOLECULAR CHARACTERIZATION OF RESISTANCE TO MACROLIDES, LINCOSAMIDES AND TYPE B STREPTOGRAMIN IN STAPHYLOCOCCI ISOLATES FROM SHIRAZ, IRAN | Reza Khashei | Antibiotics Resistance |
| P178 | 810 | ANTIMICROBIAL RESISTANCE OF ENTEROCOCCUS FAECALIS ISOLATED STRAINS FROM CLINICAL SAMPLES IN HOSPITALS AND HEALTH CENTERS OF BONAB CITY, IRAN | Farnaz Rasi bonab | Antibiotics Resistance |
| P179 | 811 | ANTIBIOTIC RESISTANCE PATTERN AND PHYLOGENETIC GROUPS OF THE UROPATHOGENIC ESCHERICHIA COLI ISOLATES RECOVERED FROM THE URINARY CATHETERS OF THE HOSPITALIZED PATIENTS | Marziyeh Taheri | Antibiotics Resistance |

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| P180 | 818 | HIGH PREVALENCE OF CLASS 1 INTEGRON AMONG CLINICAL ISOLATES OF PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM BURN PATIENTS IN TALEGHANI BURN HOSPITAL OF AHVAZ, IRAN | Moloudsadat Motahar | Antibiotics Resistance |
| P181 | 821 | Heavy metal and antibiotic resistance of Acinetobacter spp. isolated from diesel fuel polluted soil | Kais Ghaima | Antibiotics Resistance |
| P182 | 822 | ISOLATION AND ANTIBIOTIC RESISTANCE PATTERN OF SALMONELLA TYPHIMURIUM AMONG NEONATAL CALVES WITH DIARRHEA IN HAMEDAN REGION | Mohammad Khojasteh | Antibiotics Resistance |
| P183 | 843 | ASSESSMENT OF ANTIBIOTIC RESISTANCE OF STAPHYLOCOCCUS SPECIES ISOLATED OF INTENSIVE CARE UNIT (ICU) OF EMDAD HOSPITAL IN SABZEVAR | Faezeh Haghighi | Antibiotics Resistance |
| P184 | 845 | EVALUATION OF ANTIBACTERIAL ACTIVITY OF ETHANOL EXTRACT OF LAVANDULA STOECHAS L. PLANT ON ANTIBIOTIC-RESISTANT STRAINS OF ESCHERICHIA COLI | Abolfazl Jafari sales | Antibiotics Resistance |
| P185 | 850 | INCREASING THE PRODUCTION OF CLAVULANIC ACID AND CHANGING THE PATTERN OF CONSUMPTION OF ENZYMES IN THE , STREPTOMYCES CLAVULIGERUS STRAIN BY ULTRAVIOLET RAY MUTAGENESIS | AMIR HOSSIEN ArabVand | Antibiotics Resistance |
| P186 | 856 | ANTIBIOTIC RESISTANCE STUDY OF PSEUDOMONAS AERUGINOSA, A BIOFILM PRODUCER ISOLATED FROM BURN WOUNDS, GUILAN BURN CENTER | Farhad Afrasiabi | Antibiotics Resistance |

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| P187 | 872 | EVALUATION OF ANTIBACTERIAL ACTIVITY OF ETHANOL EXTRACT OF CICHORIUM INTYBUS L. PLANT ON ANTIBIOTIC-RESISTANT STRAINS OF ESCHERICHIA COLI | Abolfazl Jafari sales | Antibiotics Resistance |
| P188 | 876 | EVALUATION OF ANTIBACTERIAL ACTIVITY OF ETHANOLIC EXTRACT OF MALVA NEGLECTA AND ALTHAEA OFFICINALIS L. ON ANTIBIOTIC-RESISTANT STRAINS OF ESCHERICHIA COLI | Abolfazl Jafari sales | Antibiotics Resistance |
| P189 | 877 | MOLECULAR ANALYSIS OF CTX-M GENE PRODUCING THE BETA-LACTAMASE ENZYME IN KLEBSIELLA PNEUMONIAE ISOLATED FROM CLINICAL SPECIMEN OR PCR METHOD | Mahsa Amirani | Antibiotics Resistance |
| P190 | 878 | MOLECULAR STUDY OF EXTENDED-SPECTRUM BETA-LACTAMASE (TEM-1) GENE IN ESCHERICHIA COLI ISOLATES COLLECTED, FROM RAZI HOSPITAL IN MARAND | Farnaz Rasi bonab | Antibiotics Resistance |
| P191 | 879 | SYNERGISTIC EFFECT OF MENTHA PIPERITA ESSENTIAL OIL AND IMIPENEM AGAINST PSEUDOMONAS AERUGINOSA BIOFILMS | Zahra Resalati | Antibiotics Resistance |
| P192 | 880 | MOLECULAR EVALUATION OF CTX-M-15 GENE IN ESCHERICHIA COLI ISOLATES IN MRAND TOWN | Abolfazl Jafari sales | Antibiotics Resistance |
| P193 | 881 | SYNERGISTIC EFFECT OF ROSMARINUSOFFICINALIS ANDCUMINUMCYMINUM ESSENTIAL OILS AGAINSTMULTIDRUG-RESISTANT PSEUDOMONAS AERUGINOSA ISOLATES | Niloufar Namazi | Antibiotics Resistance |
| P194 | 890 | PREVALENCE OF QUINOLONE RESISTANCE GENES IN KLEBSIELLA PNEUMONIAE AND ESCHERICHIA COLI ISOLATES | Mohsen Heidary | Antibiotics Resistance |

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| P195 | 894 | ANTIBACTERIAL EFFECT OF ZATARIA MULTIFLORA ESSENTIAL OIL IN COMBINATION WITH CIPROFLOXACIN AGAINST BIOFILMS OF STAPHYLOCOCCUS AUREUS CLINICAL ISOLATES | Mahsa Khodayi | Antibiotics Resistance |
| P196 | 895 | RESISTANCE PATTERN OF BACILLUS CEREUS STRAINS ISOLATED FROM DAIRY PRODUCTS TO SELECTED ANTIMICROBIAL AGENTS | Mahdieh Heydarzadeh | Antibiotics Resistance |
| P197 | 896 | DISTRIBUTION OF QUINOLONE RESISTANCE GENES AMONG CLINICAL ISOLATES OF KLEBSIELLA PNEUMONIAE | Mohsen Heidary | Antibiotics Resistance |
| P198 | 897 | COMPARISON OF FLAGELLATED AND NON-FLAGELLATED BACTERIA RESISTANCE AGAINST CITRULLUS COLOCYNTHIS | Neda Eskandarzade | Antibiotics Resistance |
| P199 | 899 | ANTIMICROBIAL EFFICIENCY OF CITRULLUS COLOCYNTHIS | Neda Eskandarzade | Antibiotics Resistance |
| P200 | 905 | COMPARISON OF ANTIBIOTIC RESISTANCE PATTERNS OF PSEUDOMONAS AERUGINOSA IN HUMAN AND BOVINE ISOLATES | Niloufar Mohseni | Antibiotics Resistance |
| P201 | 906 | DETECTION OF MEXA AND MEXB EFFLUX GENES IN MULTIDRUG-RESISTANT ISOLATES OF P. AERUGINOSA BY MULTIPLEX PCR | Niloufar Mohseni | Antibiotics Resistance |
| P202 | 907 | INVESTIGATION OF ANTIBACTERIAL EFFECTS OF FERULA GUMMOSA ON VANCOMYCIN-RESISTANT ENTEROCOCCUS FAECIUM AND ENTEROCOCCUS FAECALIS STRAINS | Elnaz Afshari | Antibiotics Resistance |
| P203 | 911 | IDENTIFICATION OF CLINICAL ANTIBIOTIC RESISTANCE GENES AMONG METHICILLIN RESISTANCE STAPHYLOCOCCUS AUREUS STRAINS BY MULTIPLEX-PCR | Soheila Hasanian | Antibiotics Resistance |

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|---|---|---|---|---|
| P204 | 912 | PREVALENCE OF METHICILLIN-RESISTANCE AMONG CLINICAL ISOLATES OF STAPHYLOCOCCUS AUREUS BY PHENOTYPIC AND MOLECULAR METHODS IN AHWAZ | Soheila Hasanian | Antibiotics Resistance |
| P205 | 918 | DIARRHEAGENIC ESCHERICHIA COLI IN SOUTH OF IRAN: RESISTANT TO TETRACYCLINE IN ISOLATED STRAINS | Jalal Mardaneh | Antibiotics Resistance |
| P206 | 923 | COMPARSION OF THE EFFECT OF LUCILIA SERICATA AND NITROFURAZONE ON THE HEALING OF INFECTIOUN WOUNDS | Razieh Sohrabifar | Antibiotics Resistance |
| P207 | 924 | COMPARISON OF AVERAGE ANTIBIOTIC RESISTANCE OF GRAM POSITIVE COCCI IN HOSPITALIZED PATIENTS IN RASHT RAZI HOSPITAL BETWEEN 2012- 16 | Fatemeh Emaminejad | Antibiotics Resistance |
| P208 | 925 | STUDY THE CAUSATIVE PREVALENT BACTERIAL AGENTS AND DETERMINATION OF THEIR ANTIBIOTIC RESISTANCE PATTERN IN SEPTICEMIA (CASE STUDY IN BUSHEHR IN 1395) | Zahra Ahmadi | Antibiotics Resistance |
| P209 | 926 | AVERAGE ANTIBIOTIC RESISTANCE COMPARISON OF ENTROBACTERIACEAE ISOLATED FROM HOSPITALIZED PATIENTS IN RASHT RAZI HOSPITAL IN 2012-16 | Amirehsan Qaderi masoule | Antibiotics Resistance |
| P210 | 927 | COMPARISON OF AVERAGE ANTIBACTERIAL RESISTANCE OF NON-FERMENTER BACTERIA ISOLATED FROM HOSPITALIZED PATIENTS IN RASHT RAZI HOSPITAL IN 2012-16 | Fatemeh Emaminejad | Antibiotics Resistance |

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|---|---|---|---|---|
| P211 | 930 | ANTIBIOTIC RESISTANCE PROFILE OF KLEBSIELLA PNEUMONIAE STRAINS ISOLATED FROM IN- OR OUT-PATIENTS ADMITTED TO AYATOLLAH NABAVI HOSPITAL IN DEZFUL | Khadijeh Sheykh | Antibiotics Resistance |
| P212 | 931 | INDUCTION OF MUTATION IN KLEBSIELLA PNEUMONIAE RESISTANCE GENE USING DIFFERENT CONCENTRATIONS OF DISINFECTANTS AND ITS ASSOCIATION WITH ANTIMICROBIAL RESISTANCE | Khadijeh Sheykh | Antibiotics Resistance |
| P213 | 932 | EPIDEMIOLOGY OF MULTIDRUG-RESISTANT ACINETOBACTER BAUMANNII STRAINS IN IRAN: A SYSTEMATIC REVIEW AND META-ANALYSIS | Mansour Sedighi | Antibiotics Resistance |
| P214 | 938 | ANTIBACTERIAL ACTIVITIES OF FERULA GUMMOSA AND ITS INTERACTION IN COMBINATION WITH CONVENTIONAL ANTIMICROBIAL, AGAINST GRAM POSITIVE BACTERIA | Roghayeh Aghazadeh | Antibiotics Resistance |
| P215 | 940 | OPTIMIZATION OF BACILLUS SUBTILIS BACTERIA GROWTH CONDITIONS WITH JQ61819 IDENTIFICATION CODE, INDIGENOUS PROBIOTICS OF IRAN IN LABORATORY SCALE | Mahbubeh Abdoli Senejani | Antibiotics Resistance |
| P216 | 945 | EVALUATION OF INDUCIBLE RESISTANCE TO CLINDAMYCIN IN STAPHYLOCOCCUS AUREUS ISOLATED FROM CLINICAL AND NON-CLINICAL SPECIMENS | Neda Sheikholslami | Antibiotics Resistance |
| P217 | 946 | EVALUATION OF MIC OF MUPIROCIN IN STAPHYLOCOCCUS AUREUS ISOLATED FROM CLINICAL AND NON-CLINICAL SPECIMENS | Mahsa Pandjoo | Antibiotics Resistance |

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| P218 | 973 | MOLECULAR SCREENING OF COLISTIN RESISTANCE GENES AMONG ESCHERICHIA COLI STRAINS ISOLATED FROM POULTRY | Mahdi Askari Badouei | Antibiotics Resistance |
| P219 | 974 | VIRULENCE FACTORS IN ESCHERICHIA COLI ISOLATED FROM URINARY TRACT INFECTION AND THEIR RELATIONSHIP WITH ANTIBIOTIC RESISTANCE | Safoura Derakhshan | Antibiotics Resistance |
| P220 | 979 | ANTIBIOTICS RESISTANCE OF SALMONELLA ISOLATED FROM BROILER CHICKENS IN ARDABIL PROVINCE TO FIVE ANTIBACTERIAL AGENTS COMMONLY USED IN THE IRANIAN MEDICAL FIELD | Aidin Azizpour | Antibiotics Resistance |
| P221 | 986 | ANTIBIOTIC RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS AND ESCHERICHIA COLI ISOLATED FROM CLINICAL SAMPLES IN ESFAHAN | Fatemeh Talebi varnosfaderani | Antibiotics Resistance |
| P222 | 988 | FREQUENCY OF CTX-M-1 GENE IN ESCHERICHIA COLI ISOLATES OF ESBL-PRODUCING ENZYME IN CLINICAL SAMPLES BY POLYMERASE CHAIN REACTION (PCR) IN YASUJ | Seyed abdolmajid Khosravani | Antibiotics Resistance |
| P223-P333 | | | روز اول ساعت ۱۳:۴۵-۱۵:۰۰ | |
| P223 | 989 | MOLECULAR EPIDEMIOLOGY OF EXTENDED –SPECTRUM B-LACTAMASES GENES AMONG DIARRHEAGENIC ESCHERICHIA COLI ISOLATES PEDIATRICS FROM IN BOSHEHR, IRAN | Seyed abdolmajid Khosravani | Antibiotics Resistance |
| P224 | 991 | IN VITRO INHIBITORY EFFECT OF PYRAN NANOPARTICLES ON ESBL PRODUCING ESCHERICHIA COLI STRAINS | Azam Haddadi | Antibiotics Resistance |

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| P225 | 993 | TRENDS OF ANTIMICROBIAL RESISTANCE IN ESCHERICHIA COLI ISOLATES OBTAINED FROM A SPECIALIZED WOMEN'S AND CHILDREN'S HOSPITAL AT SOUTHWEST OF IRAN | Mahtab Hadadi | Antibiotics Resistance |
| P226 | 1007 | THE PROBABILITY OF DRUG RESISTANCE REDUCTION BY AQUEOUS AND ALCOHOLIC EXTRACTS OF QAEN BARBERRY | Mina Hanan | Antibiotics Resistance |
| P227 | 1010 | ANTIBACTERIAL EFFECT OF ARTEMISIA AUCHERI | Ali Hashemian meymandi | Antibiotics Resistance |
| P228 | 1011 | PSEUDOMONAS AERUGINOSA IN HOSPITALIZED PATIENTS: THE ASSESS MULTIDRUG RESISTANCE AND IMP GENE IN ISOLATES | Jalal Mardaneh | Antibiotics Resistance |
| P229 | 1016 | KLEBSIELLA PNEUMONIA IN HOSPITALIZED PATIENTS: DETECTION OF ANTIBIOTIC RESISTANCE GENES IN ISOLATES | Jalal Mardaneh | Antibiotics Resistance |
| P230 | 1021 | STUDY ABOUT ANTIMICROBIAL RESISTANCE OF PSEUDOMONAS AERUGINOSA IN URINARY INFECTION | Hossein Magsody | Antibiotics Resistance |
| P231 | 1031 | ASSAY OF INTEGRON-ASSOCIATED ANTIBIOTIC RESISTANCE IN KLEBSIELLA STRAINS ISOLATED FROM URINARY TRACT INFECTIONS | Azam Haddadi | Antibiotics Resistance |
| P232 | 1046 | CARBAPENEM RESISTANCE IN MULTI-DRUG RESISTANCE CLINICAL ISOLATES ACINTOBACTER BUMANNI: ASSOCIATION OF INTEGRONS | Farkhondeh Salehshoshtari | Antibiotics Resistance |
| P233 | 1047 | RECENT PROSPECTIVE OF SESQUITERPENE LACTONES'S ANTIMICROBIAL ACTIVITIES | Ghader Babaei | Antibiotics Resistance |

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| P234 | 1054 | ANTIBIOTIC RESISTANT PATTERNS OF ESCHERICHIA COLI AND KLEBSIELLA PNEUMONIAE ISOLATES COLLECTED FROM PATIENTS REFERRING TO TEACHING HOSPITALS IN AHVAZ, IRAN | Nasrin Emam | Antibiotics Resistance |
| P235 | 1055 | CONTROLLED BURN WOUNDS INFECTED WITH P. AERUGINOSA INFECTIONS WITH DRUG-RESISTANT MENTHA JUST IN VITRO AND IN VIVO ON MALE WISTAR RATS | Maryam Tayeboon | Antibiotics Resistance |
| P236 | 1069 | MOLECULAR EVALUATIONS OF EXTENDED SPECTRUM B-LACTAMASE PRODUCING STRAINS OF SERRATIA ISOLATED FROM BLOOD SAMPLES OF THE PATIENTS IN NAMAZI HOSPITAL, SHIRAZ, SOUTHERN IRAN | Shohreh Farshad | Antibiotics Resistance |
| P237 | 1072 | VIRULENCE MARKERS AND DRUG RESISTANCE IN PSEUDOMONAS AERUGINOSA | Jalal Mardaneh | Antibiotics Resistance |
| P238 | 1081 | ANTIBACTERIAL EFFECT OF HYDROALCOLIC AND AQUEOUS EXTRACT OF NIGELLA SATIVA | Seyede mohadeseh Mosavi | Antibiotics Resistance |
| P239 | 1082 | AN OVERVIEW OF THE ANTIMICROBIAL RESISTANCE OF PSEUDOMONAS AERUGINOSA IN IRAN | Sara Bahonar | Antibiotics Resistance |
| P240 | 1092 | THE ROLE OF B SUBUNIT OF RNA POLYMERASE IN RESISTANCE TO CIPROFLOXACIN | Sayyede Marzieh Nourbakhsh rezaei | Antibiotics Resistance |
| P241 | 1100 | IDENTIFICATION OF VANCOMYCIN RESISTANCE AND INDUCIBLE CLINDAMYCIN RESISTANCE AND INVESTIGATION OF MECA, ERM, MRSA,VAN GENES IN METHICILLIN-RESISTANT COAGULASE-NEGATIVE STAPHYLOCOCCI (MRCONS) CLINICAL ISOLATES OF AHVAZ GOLESTAN HOSPITAL | Rasa Sheini Mehrabzadeh | Antibiotics Resistance |

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| P242 | 1103 | ANTIBIOTIC RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS CLINICAL ISOLATE FROM A REFERRAL HOSPITAL IN MASHHAD | Mehnaz Kaffashian | Antibiotics Resistance |
| P243 | 1104 | ANTIMICROBIAL RESISTANCE PATTERN OF PSEUDOMONAS AERUGINOSA IN CLINICAL ISOLATES OF IMAM REZA HOSPITAL IN MASHHAD, THE NORTHEAST OF IRAN | Elham Babaei | Antibiotics Resistance |
| P244 | 1106 | ANTIBIOTIC RESISTANCE PATTERN OF ACINETOBACTER BAUMANNI CLINICAL ISOLATE FROM A REFERRAL HOSPITAL IN MASHHAD | Noushin Hojjatpanah | Antibiotics Resistance |
| P245 | 1109 | CHANGING THE PATTERNS OF CONSUMPTION OF ENZYMES IN CLAVULIGERUS STREPTOMYCES STRAINS BY ULTRAVIOLET RAY MUTATION IN ISP4 CULTURE MEDIUM | AMIR HOSSIEN ArabVand | Antibiotics Resistance |
| P246 | 1120 | DISSEMINATION OF INTEGRONS AMONG ACINETOBACTER BAUMANNII STRAINS ISOLATED FROM PATIENTS HOSPITALIZED IN SARI HOSPITALS, IRAN | Najmeh Ardeshiri | Antibiotics Resistance |
| P247 | 1121 | DETECTIONOF EXTENDED SPECTRUM BETA-LACTAMASES (ESBL) IN SALMONELLA ISOLATES FROM ANIMALS | Abolfazl Rafati zomorodi | Antibiotics Resistance |
| P248 | 1122 | EVALUATION OF MULTIPLE ANTIBIOTIC RESISTANCE OF SHIGELLA SPECIES | Melisa Eghbal | Antibiotics Resistance |
| P249 | 1126 | IN-VITRO ANTIBACTERIAL EVALUATION OF NEWLY SYNTHESIZED PYRIMIDIN DERIVATIVE [3,6-DIMETHYL-1-PHENYL-1H-PYRAZOLO[3,4-D]PYRIMIDIN-4-AMINE] AGAINST PSEUDOMONAS AERUGINOSA | Ghasem Sanjarani | Antibiotics Resistance |

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|---|---|---|---|---|
| P250 | 1128 | THE ROLE OF NDM-1 GENE IN CAUSING RESISTANCE TO BETA-LACTAM ANTIBIOTICS IN E. COLI ISOLATES FROM UTI PATIENTS IN SEMNAN , 2015 | Ali Akbar Shabani | Antibiotics Resistance |
| P251 | 1132 | EVALUATION OF THE TETRACYCLINE RESIDUES IN PASTEURIZED MILKS DISTRIBUTED IN RASHT BY HPLC METHOD | Sobhan Akbari Kishi | Antibiotics Resistance |
| P252 | 1133 | THE PREVALENCE OF BACTERIAL INFECTIONS IN THE URINARY TRACT IN DIABETIC PATIENTS | Fahime Omidi | Antibiotics Resistance |
| P253 | 1134 | ANTIBIOTIC RESISTANT BACTERIAL INFECTION CAUSES EMBRYONIC DEATH IN IMPERIAL FOWL | Abdolreza Nabinejad | Antibiotics Resistance |
| P254 | 1165 | RELATIONSHIP BETWEEN BERBERINE ON S. AUREUS BIOFILM WITH THE GENE FREQUENCY | Mehdi Mirzaii | Antibiotics Resistance |
| P255 | 1168 | STUDY OF PREVALANCE OF AACC3 IN CLINICAL ISOLATES OF PSEUDOMOS AEUROGINOSA | Shima Jafari | Antibiotics Resistance |
| P256 | 1170 | EVALUATION OF THE FREQUENCY PLASMID-MEDIATED QUINOLONE RESISTANT GENES IN CLINICAL ISOLATES OF PSEUDOMONAS AEROGINOSA FROM PATIENTS IN KERMAN, IRAN. | Sohrab Rajaei | Antibiotics Resistance |
| P257 | 2 | ISOLATION AND IDENTIFICATION OF BACILLUS DEGRADING HYDROCARBONS FROM WASTEWATER OF SHOUPAK FACTORY | Mehrnaz Qalandar | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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|---|---|---|---|---|
| P258 | 6 | DECOLORIZATION OF TEXTILE AZO DYE CONGO RED USING WET AND DRY BIOMASS OF NEUROSPORA SP. UTMC 5041 | Setareh Moayedi Rad | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P259 | 9 | ISOLATION AND SCREENING OF INDUSTRIALLY IMPORTANT FUNGI FROM THE SOIL AND AIR OF TEHRAN FOREST PARKS IN IRAN. | Ensieh Kargarfaragheh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P260 | 35 | بررسی مولکولی و فعالیت ضد میکروبی باکتریهای جداشده از دریای خلیج فارس | Ziba Mahmoudi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P261 | 49 | A REPORT PREVALENCE ANTHRAX IN THE WESTERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015 | Narges Babevey | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P262 | 72 | CALCULATION OF MINIMUM INHIBITORY CONCENTRATION (MIC) AND MINIMUM BACTERICIDAL CONCENTRATION (MBC) IN STREPTOCOCCUS INIA AND LACTOCOCUS GARVIEA BACTERIA USING AQUA START DISINFECTANT | Ramtin Hushangi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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|---|---|---|---|---|
| P263 | 98 | WATER SOURCE AS RISK FACTOR FOR HELICOBACTER PYLORI INFECTION AND THE EFFECT OF PROBIOTICS IN TREATMENT | Nahid Dezvaree | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P264 | 109 | OPTIMIZATION OF FORMALDEHYDE BIODEGRADATION BY NATIVE BACTERIA | Saba Amiri kojouri | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P265 | 110 | BIODEGRADATION OF FORMALDEHYDE BY ISOLATED BACTERIA FROM WASTEWATER OF PAINT PRODUCTION LANT PARS NEGIN NAMA IN MAZANDARAN PROVINCE | Saba Amiri kojouri | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P266 | 111 | PRODUCTION OF VIT B12 BY ISOLATED BACTERIA FROM SOIL AND THEIR CONFIRMATION BY HPLC | Fatemeh Farahmand | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P267 | 134 | PRODUCTION OF HEAVY POLYHYDROXYBUTIRATE AND CROTONIC ACID FROM ADVENELLA IN FREE AMMONIUM MEDIUM. | Giti Emtiazi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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|---|---|---|---|---|
| P268 | 146 | REMOVAL OF SILVER FROM PHOTOGRAPHIC WASTEWATER EFFLUENT USING ACINETOBACTER BAUMANNII BL54 | Shakibaie Mohammad Reza | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P269 | 147 | HORIZONTAL TRANSFER OF ANTIBIOTIC RESISTANCE GENES AMONG GRAM NEGATIVE BACTERIA IN SEWAGE AND LAKE WATER AND INFLUENCE OF SOME PHYSICO-CHEMICAL PARAMETERS OF WATER ON CONJUGATION PROCESS | Shakibaie Mohammad Reza | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P270 | 165 | EVALUATION THE EFFECTIVENESS OF CHEMICAL AND BIOLOGICAL SURFACTANTS IN REMOVAL OF OIL BY CRYPTOCOCCUS SP. | Aliyeh Kamyabi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P271 | 170 | ERADICATION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS USING BENEFICIAL BACTERIA IN THE SOIL | ALI JAVADI | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P272 | 182 | BIODEGRADATION OF CRUDE OIL BY A CO-CULTURE OF INDIGENOUS BACTERIA | Samaneh Sedighi Khavidak | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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|---|---|---|---|---|
| P273 | 206 | EVALUATION OF MOLYBDENUM RESISTANCE OF ACIDITHIOBACILLUS FERROOXIDANS STRAIN ZT-94: A VALUABLE ABILITY IN BIOTECHNOLOGICAL APPLICATIONS | Marziyeh Bahrami Bavani | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P274 | 225 | OPTIMIZATION OF S-LAYER PROTEIN PURIFICATION FROM DEINOCOCCUS RADIODURANS WITH THE RESPONSE SURFACE METHOD | Alireza Jalalvand | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P275 | 268 | SURVEY OF MICROBIAL QUALITY IN BALLAST WATER OF COMMERCIAL SHIPS ENTERING BUSHEHR PORT, ALONG THE PERSIAN GULF | Fatemeh Farajighasemi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P276 | 277 | EVALUATION OF PYRENE AND TETRACOSANE BIODEGRADATION BY ASPERGILLUS PSEUDOFELECTUS IN THE PRESENCE OF VARIOUS SURFACTANTS | Hassan Ghorbannezhad | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P277 | 285 | A PHYLOGENETIC STUDY OF VIBRIO PARAHAEMOLYTICUS ISOLATES IN IRAN AND COMPARING THEM WITH THOSE OF THE WORLD | Ahmad Halakou | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P278 | 305 | CONVERSION OF NITRATE TO N2 GAS BY IMMOBILIZED BACTERIAL ENZYMES ON VERMICULITE | Badrieh Fazeli | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P279 | 311 | BIODEGRADATION OF COMMERCIAL POLYESTER IMPRANIL (DLN) BY RHODOTORULA MUCILAGINOSA | Neshat Saffarzadeh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P280 | 366 | ISOLATION OF MINERAL SOLUBILIZING BACTERIA FROM RHIZOSPHERE OF SOME PLANTS IN KERMAN | Vali Riazi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P281 | 437 | NEWLY ISOLATED THERMOTOLERANT ALKALIPHILIC BACILLUS SP. DEM07 FROM HOT SPRING IN DEHLORAN, IRAN. | Lale Nazari | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P282 | 448 | STATISTICAL EVALUATION OF SOME EFFECTIVE VARIABLES ON BIOMASS PRODUCTION OF CHLORELLA SP. WT1 ISOLATED FROM PERSIAN GULF OF IRAN | Mahroo sadat Seyed jafari olia | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P283 | 450 | CHARACTERIZATION OF AN EXTRACELLULAR SERINE PROTEASE SECRETED FROM THERMOTOLERANT ALKALIPHILIC BACILLUS SP. DEM07 | Lale Nazari | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P284 | 476 | EVALUATION THE PERFORMANCE OF BIOFILTER IN HYDROGEN SULPHID AND AMMONIA GASSES ELIMINATION ON LABORATORY SCALE AS A PRACTICAL MODEL IN INDUSTRIAL CATTLE | Sahar Karami rubati | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P285 | 498 | CELLULASE PRODUCTION BY INDIGENOUS CELLULOLYTIC RHODOCOCCUS AND ENTEROBACTER SPECIES | Samaneh Sedighi Khavidak | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P286 | 510 | THE USAGE (APPLICATION) AND ROLE OF ARCHEABACTERIA IN FIXATION (STABLIZING) OF SAND DUNES | Daniyal Afrazeh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P287 | 570 | DETECTION OF ANTIBIOTIC RESISTANT GENES OF TETW, CTX-M-32, AND AAC3 -1 IN MUNICIPAL WASTEWATER | Rahim Aali | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P288 | 579 | ISOLATION AND IDENTIFICATION OF FUNGI PRODUCING CELLULASE ENZYME FROM SUGARCANE BAGASSE COMPOST | Zahra Jahani | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P289 | 580 | EVALUATION OF YEASTS WITH CAPABLE OF BIODEGRATION OF GREEN KHAMSI AND ACTIVE ORANG COLORS. | Leila Darvishi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P290 | 585 | EVALUATION OF BACILLUS WITH CAPABLE OF BIODEGRATION OF METHYL RED AND RUBIN DYPRSY COLORS | Leila Darvishi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P291 | 613 | PRODUCTION AND OPTIMIZATION OF SINGLE CELL OIL IN CYANOBACTERIA | Susan Solati | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P292 | 619 | INVESTIGATION THE EFFECT OF VARIOUS SELENATE CONCENTRATIONS ON THE GROWTH OF SPIRULINA PLATENSIS | Fatemeh Yaghoobizadeh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P293 | 631 | COMPARISON BETWEEN ZARROUK MEDIUM AND MODIFIED ZARROUK MEDIUM FOR YIELD THE BEST BIOMASS | Fatemeh Yaghoobizadeh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P294 | 657 | THE EFFECT OF C:N RATIO AND DIFFERENT NITROGEN SOURCES ON LACTIC ACID PRODUCTION BY LACTOBACILLUS DELBRUECKII | Amirhossein Ghadiri | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P295 | 662 | BIOTECHNOLOGICAL APPLICATIONS OF EXTRACELLULARPOLYMERIC SUBSTANCES OF CYANOBACTERIUM NOSTOC | Bahareh Nowruzi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P296 | 679 | SCREENING OF CHITINASE FROM HALOPHILIC AND HALOTOLERANT BACTERIA | Sanaz Khadem | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P297 | 699 | SEROLOGICAL DETECTION OF HUMAN GROUP A ROTAVIRUSES IN URBAN AND HOSPITAL SEWAGE SYSTEMS AND RIVER WATER SAMPLES IN ALBORZ PROVINCE | Zahra Torfeh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P298 | 765 | EXAMINING THE PHENOL OXIDASE ACTIVITY OF WHITE-ROT FUNGI ISOLATED FROM IRANIAN NORTHERN FORESTS | Simin Maroof | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P299 | 770 | INVESTIGATION ON PRODUCTION AND PURIFICATION OF POLYHYDROXYBUTYRATE FROM INDIGENOUS BACTERIAL SPECIES OF RASHT ZARJOUB RIVER | Zeinab Hami saravani | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P300 | 772 | ISOLATION AND IDENTIFICATION OF HALOPHILIC MICROORGANISMS PRODUCING LIPASE ENZYME | Madeh Ghaderi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P301 | 775 | CANDIDA SPECIES ISOLATION FROM WATER SEDIMENTS AND STUDDING THEIR ENZYMATIC PROPERTIES | Shohreh Nasiri poroj | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P302 | 809 | OPTIMIZATION OF OZONATION TIME PERIOD TO KILL PROBIOTIC AND PATHOGEN BACTERIA | Mohammad Sadegh Safari | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P303 | 813 | SCREENING AND IDENTIFICATION OF KERATINOLYTIC BACTERIA FROM POULTRY FEATHER DUMPING SOIL | Neda Kouroshzadeh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P304 | 825 | BIOTRANSFORMATION OF DIBENZOTHIOPHENE TO 2-HYDROXYBIPHENYL BY IMMOBILIZED BACTERIA | Fatemeh Davoodi Dehaghani | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P305 | 826 | INVESTIGATING THE ABILITY OF SOIL MICROORGANISMS IN THE BIODEGRADATION OF RESISTANT OIL COMPOUNDS | Fatemeh Davoodi Dehaghani | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P306 | 852 | EVALUATION OF ANTIMICROBIAL ACTIVITY OF BACILLUS SUBTILIS ISOLATED FROM SOILS BEHBAHAN VIA DISC DIFFUSION | Maryam Dadar | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P307 | 857 | REPLACING SOYBEAN MEAL WITH WHEY POWDER IN ERYTHROMYCIN PRODUCTION WITH MICROBIAL FERMENTATION | Maryam Firoozbakht | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P308 | 862 | EVALUATION OF MEDICAL WASTE STERILIZATION IN TEHRAN HOSPITALS. | Ameneh Elikaei | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P309 | 867 | EVALUATION OF MICROBIAL QUALITY OF WATER IN IRANIAN CAVES | Ameneh Elikaei | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P310 | 868 | SCREENING AND IDENTIFICATION OF NATIVE HALOPHILIC ARCHAEA WITH CHITINOLYTIC ACTIVITY | Maryam Yavari bafghi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P311 | 887 | THE INFLUENCE OF VERMIREMEDIATION ON THE MICROBIAL SPECIES OF GAS OIL CONTAMINATED SOILS | Zahra Beagom Mokhtari Hosseini | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P312 | 898 | EFFECT OF MEDIA COMPOSITION ON GROWTH PATTERN OF CHLORELLA VULGARIS | Mahroo sadat Seyed jafari olia | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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|---|---|---|---|---|
| P313 | 903 | EVALUATION OF DRINKING WATER ENTRIT VIRAL CANTAMINATION IN THE SOMESARA PROVINCE | Hilda Farhoomand | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P314 | 929 | IMPACT OF WASTEWATER TREATMENT PROCESS ON ANTIBIOTIC-RESISTANT HETEROTROPHIC BACTERIA | Rahim Aali | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P315 | 934 | ANTAGONISTIC ACTIVITY OF THREE SEWAGE ISOLATED BACTERIOPHAGES ON THE MULTIDRUG RESISTANT PATHOGENIC BACTERIA | Nafiseh Sadat Naghavi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P316 | 935 | INFLUENCE OF PRE-CULTURE CONDITIONS ON THE VIABILITY OF THERMOPHILIC FREEZE DRIED YOGURT STARTERS | Nafiseh Sadat Naghavi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P317 | 944 | ANTIFUNGAL EFFECT OF LAWSONIA INERMIS (HENNA) ON CANDIDAL VAGINITIS IN RAT | Mahnaz Fatahinia | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

| Code | ID | Title | Submission Author | Session |
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| P318 | 966 | MEDIA SELECTION FOR GROWTH OF LENTINUS EDODES (AGARICOMYCETES) IN SOLID AND SUBMERGED CULTURES | Zahra Beagom Mokhtari Hosseini | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P319 | 969 | MICROSCOPIC FUNGI, A NEW CHALLENGE IN WATER QUALITY MONITORING | Mahshid Keshavarzi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P320 | 982 | REVIEW ON ASSOCIATION BETWEEN CORALS AND THEIR SYMBIOTIC MICROORGANISMS FROM THE ECOLOGY AND BIOTECHNOLOGY PERSPECTIVE | Zahra Aminikhoei | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P321 | 998 | PRODUCTION AND OPTIMIZATION OF BACTERIAL NANOCELLULOSE BY GLUCONOACETOBACTER XYLINUS PTCC 1734 | Shahab Nazari Shad | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P322 | 999 | PROBIOTIC BIOMASS PRODUCTION FROM VEGETABLE WASTE BY LACTOBACILLUS CASEI: OPTIMIZATION BY TAGUCHI DESIGN OF EXPERIMENTS (DOE) METHODOLOGY | Porya Khademi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

| Code | ID | Title | Submission Author | Session |
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| P323 | 1005 | ANTIMICROBIAL ACTIVITY OF THREE ESSENTIAL OILS AN PHYTOPATHOGENIC BACTERIA, XANTHOMONAS CAMPESTRIS. | MARYAM MIZABI ASL | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P324 | 1020 | ISOLATION OF BISPHENOL-A BIODEGRADING BACTERIA FROM SOIL OF GARBAGE DEPOT LOCATION | Esmaeil Ghorbanalinezhad | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P325 | 1026 | POTENTIAL OF THE ARRANGEMENT OF PKS ENZYMATIC DOMAINS FOR CHANGING FINAL BIOACTIVE MOLECULES IN FUNGI | Shamsozoha Abolmaali | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P326 | 1029 | USE OF FMD PROMOTER FOR EXTRACELLULAR EXPRESSION OF HUMAN GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR IN PICHIA PASTORIS | Sajjad Yazdanpanah | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P327 | 1032 | EVALUATION OF MICROBIAL WASTES DISPOSAL METHOD OF MICROBIOLOGICAL LABORATORIES | Pezhman Sharifi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P328 | 1036 | IDENTIFICATION OF HELICOBACTER PYLORI INFECTION BY STANDARD PCR METHOD IN COMPARISON WITH UREASE METHOD | Maedeh Pourali eshkalak | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P329 | 1056 | SOFTWARE BASED MPN ENUMERATION OF AMMONIFYING BACTERIA IN MUNICIPAL WASTEWATER TREATMENT SYSTEM | Behnaz Mirelmi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P330 | 1071 | PHENOL BIODEGRADATION BY ENHANCED BIOFILM FORMING BACTERIA IN A MOVING BED BIOFILM REACTOR | Sahar Irankhah | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P331 | 1074 | OPTIMIZATION OF L-ASPARGINASE PRODUCTION ON SOLID STATE FERMENTATION BY USING OF ISOLATED BACILLUS MUJAVENSIS | Shadi Parvaneh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P332 | 1076 | DESIGN AND EVALUATION OF STRUCTURAL AND FUNCTIONAL FEATURES OF NEW IMMUNOTOXIN STRUCTURAL EFFECT ON CEA-RELATED MALIGNANCIES IN PSEUDO-PHYSIOLOGICAL CONDITIONS | Masoumeh Hamehvand | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P333 | 1077 | MOLECULAR EVALUATION OF MICROCYSTIS SPP. (CYANOBACTERIA) IN THE KOR RIVER WATERS | Mehrzad Zare | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P334-P444 | | | روز اول ساعت ۱۵:۱۵-۱۶:۳۰ | |
| P334 | 1079 | EXPRESSION OF AN ANTIBODY FRAGMENT (SCFV) AGAINST AMYLOID-BETA USING T7 PROMOTER IN FED-BATCH CULTIVATION MODE | Sahar Hasani afshar | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P335 | 1088 | ISOLATION AND SCREENING OF IRANIAN QUERCUS ENDOPHYTES AGAINST TS GENE | Shamsozoha Abolmaali | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P336 | 1089 | COMPARISON OF HEMAGGLUTINATION AND CYTOTOXICITY IN TWO ANTIBACTERIAL PEPTIDES PRODUCED BY NATIVE STRAINS | Shakiba Darvish Alipour Astaneh | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P337 | 1093 | EXPRESSION OF AN ANTIBODY FRAGMENT (SCFV) AGAINST PCRV PROTEIN OF PSEUDOMONAS AERUGINOSA IN FED-BATCH CULTIVATION MODE | SABA KARAM | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P338 | 1099 | EFFECT OF DIFFERENT ETHYLENEDIAMINETETRAACE TIC ACID CONCENTRATIONS ON VIABILITY OF MICROALGAE | Atefeh Khamoushi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P339 | 1113 | EVALUATION OF BETAGALACTOSIDASE GENES OF XANTHOMONAS CITRI-K37 FOR DIRECT USE OF LACTOSE IN XANTHAN GUM PRODUCTION | ROYA MORAVEJ | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P340 | 1115 | MORPHOLOGICAL EVALUATION OF PHYTOPATHOGENICITY OF XANTHOMONAS CAMPESTRIS AGAINST BRASSICA OLERACEA VAR. CAPITATA UNDER ASEPTIC CULTURE CONDITION | Leila Amini | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P341 | 1119 | CLONING, EXPRESSION AND PURIFICATION OF AN ANTI CD3/CD19 BISPECIFIC ANTIBODY | Reza Moazzami Godarzi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P342 | 1129 | DETECTION AND TRACING OF SHIGELLA DYSENTERIAE BASED ON DNA-NANO BIOSENSOR | Leyla Tahmasbi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

| Code | ID | Title | Submission Author | Session |
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| P343 | 1143 | EVALUATION OF THE ANTIFUNGAL PROPERTIES OF THE SEED ESSENTIAL OILS OF ANETHUM GRAVEOLENS AND ECHINOPS SETIFER AGAINST CANDID ALBICANS | Zahra Safdari | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P344 | 1147 | COMPARING EFFECT OF DIFFERENT IMMUNIZATION ROUTE ON THE HUMORAL IMMUNE RESPONSES INDUCED BY MYCOBACTERIUM TUBERCULOSIS RECOMBINANT PROTEIN | Nooshin Sohrabi | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P345 | 1155 | A MINIATURE CULTURE SYSTEM TO SCREEN CYANOBACTERIA SPIRULINA PLATENSIS CULTIVATION | Ali Sheykhinejad | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P346 | 1156 | EFFECTS OF DIETARY BUTYRIC ACID AND PROPIONIC ACID ON GROWTH PERFORMANCE, SURVIVAL RATE AND RESISTANCE AGAINST YERSINIA RUCKERI IN CASPIAN ROACH (RUTILUS CASPICUS YAKOVLEV, 1870) | Mohammad Mazandarani | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |
| P347 | 1162 | PARACOCCUS SP. ISOB 09 A NOVEL FACULTATIVE CHEMOLITHOAUTOTROPHIC BACTERIUM ISOLATED FROM SLUDGE | Fatemeh Nazari | Applied Microbiology (Microbial Biotechnology- Industerial Microbiology- The Environmental Microbiology, Water and Wastewater) |

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| P348 | 1163 | BIODESULFURIZATION OF SULFUR COMPOUNDS BY HALOTHIOBACILLUS SP. ISOB 14 A CHEMOLITHOAUTOTROPHIC ISOLATED BACTERIUM | Fatemeh Nazari | Applied Microbiology (Microbial Biotechnology-Industerial Microbiology-The Environmental Microbiology, Water and Wastewater) |
| P349 | 15 | A REVIEW OF RELATED RESEARCH ON WOUND AND BURN INFECTIONS IN ISFAHAN PROVINCE | Mohammad Rabbani Khorasgani | Detection and Typing of Microorganisms |
| P350 | 19 | A PYROSEQUENCING-BASED ANALYSIS OF MICROBIAL DIVERSITY IN SPONGES COLLECTED FROM THE PERSIAN GULF | Akram Najafi | Detection and Typing of Microorganisms |
| P351 | 33 | RELATIONSHIP OF COA GENE LENGTH POLYMORPHISM WITH THE SOURCE OF CONTAMINATION IN CLINICAL STAPHYLOCOCCUS AUREUS ISOLATES | Reza Yari | Detection and Typing of Microorganisms |
| P352 | 40 | STUDY OF 3' REGION LENGTH POLYMORPHISM OF CLFA GENE IN STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM THREE HOSPITALS IN QOM CITY | Reza Yari | Detection and Typing of Microorganisms |
| P353 | 44 | MOLECULAR TYPING OF UROPATHOGENIC E. COLI STRAINS ISOLATED FROM HOSPITALIZED PATIENTS IN GHAEM HOSPITAL IN MASHHAD | Zakieyh Iman panah | Detection and Typing of Microorganisms |
| P354 | 60 | BIOINFORMATICS STUDY OF SOME HOUSEKEEPING GENES IN IDENTIFICATION AND DIFFERENTIATION OF NONTUBERCULOSIS MYCOBACTERIA | Masoud Keikha | Detection and Typing of Microorganisms |

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| P355 | 61 | E. COLI RECA GENE IMPROVES GENE TARGETED HOMOLOGOUS RECOMBINATION IN MYCOPLASMA HYORHINIS | Amin Khalili | Detection and Typing of Microorganisms |
| P356 | 63 | BACTERIA IDENTIFICATION FROM ABDOMINAL CAVITY OF ANDROCTONUS CRASSICUDA | Hedieh Jafari | Detection and Typing of Microorganisms |
| P357 | 95 | EPIDEMIOLOGY OF HUMAN PAPILLOMA VIRUS INFECTION AMONG IRANIAN WOMEN WITH CERVICAL INFECTION — A SYSTEMATIC REVIEW AND META-ANALYSIS | Samaneh Arefzadeh | Detection and Typing of Microorganisms |
| P358 | 105 | DISTRIBUTION OF HEPATITIS C VIRUS GENOTYPES AMONG HCV POSITIVE PATIENTS IN IRAN BY PCR-RFLP | Anahita Barghi | Detection and Typing of Microorganisms |
| P359 | 149 | DIFFERENTIATION OF NON-TUBERCULOSIS MYCOBACTERIA USING PRA METHOD | Masoud Keikha | Detection and Typing of Microorganisms |
| P360 | 194 | DETECTION OF ISABA19 IN ACINETOBACTER BAUMANNII AS A DISRUPTING AGENT OF OXA-51 | Himen Salimizand | Detection and Typing of Microorganisms |
| P361 | 205 | The Relation between Incidence of ABC Genes and The infection with EBV and HTLV-1 in Chronic Myeloid Leukemia | Ali Almarzoqi | Detection and Typing of Microorganisms |
| P362 | 233 | SCREENING, ISOLATION AND MOLECULAR IDENTIFICATION OF BIODEGRADING MYCOBACTERIA FROM IRANIAN ECOSYSTEMS AND ANALYSIS OF THEIR BIOREMEDIATION CAPABILITY. | Davoud Azadi | Detection and Typing of Microorganisms |
| P363 | 236 | PREVALENCE OF VARICELLA ZOSTER VIRUS IN PATIENTS WITH STROKE AND ITS COMPARISON WITH A CONTROL GROUP BY PCR | Faezeh Mokhtari | Detection and Typing of Microorganisms |

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| P364 | 255 | MOLECULAR DETECTION OF STAPHYLOCOCCUS AUREUS ENTEROTOXINS B USING LOOP-MEDIATED ISOTHERMAL AMPLIFICATION | Fatemeh Sheikhi | Detection and Typing of Microorganisms |
| P365 | 279 | DETECTION AND GENETIC CCHARACTERIZATION OF NOROVIRUSES GENOGROUP II IN CHILDREN LESS THAN 5 YEARS OF AGE HOSPITALIZED WITH AACUTE GGASTROENTERITIS IN TEHRAN, IRAN | Mahsa Farsi | Detection and Typing of Microorganisms |
| P366 | 280 | DETECTION OF UREAPLASMA UREALYTICUM IN CLINICAL SEMEN SAMPLES OF INFERTILE MEN BY USING MOLECULAR METHOD | Maryam Tohidpour | Detection and Typing of Microorganisms |
| P367 | 281 | MOLECULAR DETECTION AND TYPING OF ACINETOBACTER BAUMANNII ISOLATED FROM CLINICAL SETTINGS OF IRAN, TEHRAN | Arezoo Piran | Detection and Typing of Microorganisms |
| P368 | 318 | PREVALENCE OF URINARY TRACT INFECTIONS AND ITS CAUSATIVE AGENTS IN IMAM REZA HOSPITAL, BOJNURD, AT SUMMER AND AUTUMN 1395 | Reza Behzadfar | Detection and Typing of Microorganisms |
| P369 | 324 | DETECTION OF VIBRIO CHOLERAE O1 USING LOOP-MEDIATED ISOTHERMAL AMPLIFICATION | Seyedeh mahnaz Mousavi | Detection and Typing of Microorganisms |
| P370 | 326 | PREVALENCE AND GENOTYPING OF METHICILLIN-RESISTANT AND SUSCEPTIBLE STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM PATIENTS OF A UNIVERSITY HOSPITAL OF ISFAHAN CITY, IRAN | Mehrdad Halaji | Detection and Typing of Microorganisms |
| P371 | 332 | RAPID DETECTION OF MORGANELLA MORGANII BY A DNA-BASED POINT-OF-CARE ISOTHERMAL AMPLIFICATION METHOD | Erfan Shahbazi | Detection and Typing of Microorganisms |

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| P372 | 333 | ISOLATION AND MOLECULAR IDENTIFICATION OF A COLD-ADAPTED YEAST, RHODOTORULA MUCILAGINOSA SP. GUMS16 FROM GUILAN, NORTH OF IRAN | Masoud Hamidi | Detection and Typing of Microorganisms |
| P373 | 338 | ANALYSIS OF HPV 16 E6 SEQUENCE VARIATIONS IN IRANIAN PATIENTS WITH CERVICAL CARCINOMA | Sedigheh Taghinezhad Saroukalaei | Detection and Typing of Microorganisms |
| P374 | 339 | GENOTYPING OF MULTIDRUG-RESISTANT STRAINS OF PSEUDOMONAS AERUGINOSA ISOLATED FROM BURN | Ali Mohammadian | Detection and Typing of Microorganisms |
| P375 | 346 | THE USE OF FINE JLBRG TO IMPROVE HUMAN LIFE | Pardis Parvin | Detection and Typing of Microorganisms |
| P376 | 354 | INVESTIGATION OF VARIABLES IN CHLAMYDIAL CERVICITIS AMONG HOUSEWIVES IN KARAJ CITY | Monir Ebadi magvan | Detection and Typing of Microorganisms |
| P377 | 357 | PHENOTYPIC CHARACTERIZATION OF VIRULENCE FACTORS IN KLEBSIELLA PNEUMONIAE ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS IN IRAN | Fatemeh Eghbalpoor | Detection and Typing of Microorganisms |
| P378 | 360 | EPIDEMIOLOGY OF PULMONARY TUBERCULOSIS IN AHAR, NORTH WEST OF IRAN | Maryam Poorzare | Detection and Typing of Microorganisms |
| P379 | 363 | DETECTION OF RESISTANT GENES EXTENDED SPECTRUM BETA LACTAMASES (ESBL) IN ESCHERICHIA COLI FROM PATIENTS WITH URINARY TRACT INFECTION | Maryam Hafiz | Detection and Typing of Microorganisms |
| P380 | 380 | APPLICATION OF LOOP MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) TECHNIQUE IN THE DETECTION OF PARASITES: A SYSTEMATIC REVIEW | Pooya Ghasemi Nejad Almani | Detection and Typing of Microorganisms |
| P381 | 396 | DESIGNING A NEW PRIMERS FOR DETECTION OF CHLAMYDIA TRACHOMATIS OMPA GENE | Negar Rahmati kian | Detection and Typing of Microorganisms |

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| P382 | 401 | MOLECULAR DIAGNOSIS OF CYTOMEGALOVIRUS IN SEMEN OF INFERTILIE MEN BY PCR | zeynab Dalirgoli | Detection and Typing of Microorganisms |
| P383 | 408 | FREQUENCY AND ANTIBIOTIC RESISTANCE PATTERNS OF ENTEROAGGREGATIVE ESCHERICHIA COLI ISOLATES FROM CHILDREN WITH DIARRHEA IN AHVAZ | Mehrandokht Sirous | Detection and Typing of Microorganisms |
| P384 | 409 | UPDATE ON THE EPIDEMIOLOGY AND CIRCULATING GENOTYPES OF ROTAVIRUS IN IRANIAN CHILDREN WITH SEVERE DIARRHEA; 1986-2015 | Zabihollah Shoja | Detection and Typing of Microorganisms |
| P385 | 432 | DETECTION OF RESISTANT GENES ESBL IN ESCHERICHIA COLI ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTION IN GHAEM AND EMAM REZA HOSPITALS IN MASHHAD | Maryam Hafiz | Detection and Typing of Microorganisms |
| P386 | 459 | PHYLOGENY OF MYCOPLASMA AGALACTIAE VACCINE STRAINS IN IRAN, A MOLECULAR STUDY BASED ON MULTILOCUS SEQUENCE TYPING | Khatereh Kabiri | Detection and Typing of Microorganisms |
| P387 | 461 | VNTR TYPING OF MYCOPLASMA AGALACTIAE VACCINE STRAIN USING A SIMPLIFIED MCAULIFFE PROCEDURE | Khatereh Kabiri | Detection and Typing of Microorganisms |
| P388 | 472 | MULTIPLEX DETECTION OF FOUR POTENTIALLY DEADLY PATHOGENS WITH SUSPENSION ARRAY TECHNOLOGY | Sanaz Pourmohammad | Detection and Typing of Microorganisms |
| P389 | 491 | THE E.COLI BL21(DE3) STRAIN FOR EXPRESSION OF RECOMBINANT PROTEIN (AGB8/2) OF ECHINOCOCCUS GRANULOSUS | Sareh Bashiri | Detection and Typing of Microorganisms |
| P390 | 495 | HELICOBACTER PYLORI SEROPREVALENCE IN THE URBAN POPULATION OF KERMAN, IRAN | Sadegh Afzali | Detection and Typing of Microorganisms |

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| P391 | 502 | AIVS (H9N2 ,H5N1 AND H5N8 ) MONITORING IN ISFAHAN BIRDS GARDEN | Abdolreza Nabinejad | Detection and Typing of Microorganisms |
| P392 | 504 | CAMPYLOBACTER COLI DETECTION AND EVALUATION OF GENETIC DIVERSITY OF A FRAGMENT OF A PARTICULAR GENE, IN BROILER CHICKENS IN KERMANSHAH CITY, BY HRM METHOD | Fatemeh Hoseinpour | Detection and Typing of Microorganisms |
| P393 | 507 | FREQUENCY OF SEROTYPES K1 AND K2 AMONG CLINICAL ISOLATES OF KLEBSIELLA PNEUMONIAE ISOLATED FROM EDUCATIONAL HOSPITALS OF QAZVIN | Samaneh Afshar ghahremani | Detection and Typing of Microorganisms |
| P394 | 533 | EXPRESSION OF THE RECOMBINANT B8/1 GENE OF ECHINOCOCCUS GRANULOSUS IN ROSETTA(DE3) E.COLI | Tahereh Faramarzi | Detection and Typing of Microorganisms |
| P395 | 537 | MOLECULAR IDENTIFICATION AND DETECTION OF EXOTOXIN A GENE AMONG PSEUDOMONAS AERUGINOSA ISOLATED FROM HOSPITAL OF QAZVIN AND TEHRAN, IRAN | Narges Pourzereshki | Detection and Typing of Microorganisms |
| P396 | 540 | EVALUATION OF THE PREVALENCE OF HERPESVIRAL ENCEPHALITIS IN CHILDREN WITH ASEPTIC MENINGOCOCCAL DISEASE IN IMAM REZA HOSPITAL, BOJNOURD-NORTH KHORASAN - IN THE SUMMER AND AUTUMN OF 1395 | Saghar Safamanesh | Detection and Typing of Microorganisms |
| P397 | 542 | ISOLATION AND PURIFICATION OF MYXOBACTERIA FROM SOIL | Atousa Aliahmadi | Detection and Typing of Microorganisms |
| P398 | 546 | PRODUCTION, CHARACTERIZATION AND PURIFICATION OF DESFERRIOXAMINE B FROM STREPTOMYCES PILOSUS CULTURE | Atousa Aliahmadi | Detection and Typing of Microorganisms |

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| P399 | 548 | FREQUENCY OF BACTERIAL AGENTS ISOLATED FROM PATIENTS WITH CHRONIC SINUSITIS IN TEHRAN CITY | Mojden Aryannejad | Detection and Typing of Microorganisms |
| P400 | 557 | DETECTION OF PROTEUS SPP. IN HUMAN URINE BY AMPLIFICATION OF RIBOSOMAL GENE IN URMIA | Akram Aghayanzadeh | Detection and Typing of Microorganisms |
| P401 | 563 | MICROBIAL PATHOLOGY OF SOME WRITTEN DOCUMENTS OF ASTANE QUDSE RAZAVI LIBRARY | Samira Behdani | Detection and Typing of Microorganisms |
| P402 | 565 | IDENTIFICATION OF CAPSULE TYPES K1 AND K2 OF KLEBSIELLA NOMANIA IN HUMAN URINE IN URMIA | Fariba Esmaelishirvanshahi | Detection and Typing of Microorganisms |
| P403 | 573 | MOLECULAR EPIDEMIOLOGY OF AVIAN PASTEURELLA MULTOCIDA ISOLATES CIRCULATING IN IRAN BY MULTILOCUS SEQUENCE TYPING | Mahshid Siroosh | Detection and Typing of Microorganisms |
| P404 | 582 | PREVALENCE OF PANTON-VALENTINE LEUKOCIDIN (PVL) GEN IN STAPHYLOCOCCUS AUREUS ISOLATED FROM NOSOCOMIAL INFECTIONS | Fahimeh Nourbakhsh | Detection and Typing of Microorganisms |
| P405 | 583 | ANTIBIOTIC RESISTANCE AND CARRIAGE INTEGRON CLASSES IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII FROM NOSOCOMIAL INFECTIOUS, IRAN | Fahimeh Nourbakhsh | Detection and Typing of Microorganisms |
| P406 | 589 | THE PREVALENCE OF CHLAMYDIA TRACHOMATIS INFECTION AMONG CERVICITIS AND ASYMPTOMATIC WOMEN IN SHAHREKORD, IRAN | Samira Sardari | Detection and Typing of Microorganisms |
| P407 | 598 | CYTOTOXIN-ASSOCIATED GENE A (CAGA) STATUS AMONG HELICOBACTER PYLORI SEROPOSITIVE PATIENTS | Sadegh Afzali | Detection and Typing of Microorganisms |
| P408 | 608 | SCREENING KOOHDADASHT SOIL FOR ANTIBIOTIC-PRODUCING MOLDS | Zahra moghimi | Detection and Typing of Microorganisms |

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| P409 | 609 | DETECTION OF STREPTOCOCCUS AGALACTIAE AT VAGINAL COLONIZATION IN PREGNANT WOMEN BY PCR | Rasoul Yousefi Mashouf | Detection and Typing of Microorganisms |
| P410 | 618 | EVALUATION OF TWO METHODS IN ISOLATION OF NOCARDIA SPECIES FROM SOIL | Masoud Keikha | Detection and Typing of Microorganisms |
| P411 | 620 | CHARACTERIZATION OF IRANIAN GRAPEVINE ISOLATES OF AGROBACTERIUM TUMEFACIENS AND A. VITIS | Fariborz Farashzadeh | Detection and Typing of Microorganisms |
| P412 | 621 | BACTERIAL ENDOPHYTES AS POTENTIAL BIOCONTROL AGENTS OF CROWN GALL DISEASES | Fariborz Farashzadeh | Detection and Typing of Microorganisms |
| P413 | 622 | MOLECULAR IDENTIFICATION OF PSEUDOMONAS SYRINGAE PV. SYRINGAE STRAINS CAUSING BACTERIAL CANKER DISEASE | Fardin Nosratneghad | Detection and Typing of Microorganisms |
| P414 | 623 | BIOCHEMICAL DIVERSITY OF PSEUDOMONAS SYRINGAE PV. SYRINGAE STRAINS THE CAUSAL AGENT OF BACTERIA CANKER ON STONE FRUIT SPECIES | Fardin Nosratneghad | Detection and Typing of Microorganisms |
| P415 | 634 | MOLECULAR TYPING OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS BY MECA GENE POLYMORPHISM | Mojgan Dadar | Detection and Typing of Microorganisms |
| P416 | 664 | THE PREVALENCE OF ERYTHRASMA IN TEHRAN , IRAN, 1390-1396 | Malihe Akbari jo | Detection and Typing of Microorganisms |
| P417 | 681 | IDENTIFICATION AND PHENOTYPIC DIVERSITY OF XANTHOMONAS ARBORICOLA PV. JUGLANDIS ISOLATED FROM WALNUTS | Aysan Heydari | Detection and Typing of Microorganisms |
| P418 | 682 | STUDY THE PREVALENCE OF STAPHYLOCOCCUS AUREUS BACTERIA IN UMBILICAL CORD INFECTION OF KERMANIAN INFANTS BY PCR. | Arezo Kasavandi | Detection and Typing of Microorganisms |

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| P419 | 683 | MOLECULAR IDENTIFICATION OF ERWINIA AMYLOVORA ISOLATES THE CAUSAL AGENT OF FIRE BLIGHT | Arezo Purmand | Detection and Typing of Microorganisms |
| P420 | 686 | IDENTIFICATION OF HELMINTHIC PARASITES IN SOME ENDEMIC AND EXOTIC FISH OF ANZALI WETLAND, GUILAN, IRAN | Seyed Fakhraddin Mirhashemi Nasab | Detection and Typing of Microorganisms |
| P421 | 691 | DETERMINATION OF THE FREQUENCY OF COAGULASE NEGATIVE STAPHYLOCOCCI ISOLATED FROM CLINICAL SAMPLES IN MARAND, IRAN | Nazila Imeni | Detection and Typing of Microorganisms |
| P422 | 697 | OCCURRENCE AND INTENSITY OF PARASITES IN NORTHERN PIKE, ESOX LUCIUS, FROM ANZALI WETLAND,SOUTHWEST OF THE CASPIAN SEA, IRAN | Seyed Fakhraddin Mirhashemi Nasab | Detection and Typing of Microorganisms |
| P423 | 710 | DIAGONSE STAPHYLOCOCCUS AUREUS PHARANYX CARRIERS AND ITS ANTIBIOTIC SUSCEPTIBILITY PATTERN IN THE OF ORUMEH LABORATORY | Kamran Rahbarei | Detection and Typing of Microorganisms |
| P424 | 712 | CHARACTERIZATION OF ERWINIA AMYLOVORA STRAINS THE CAUSAL AGENT OF FIRE BLIGHT OF POME FRUIT TREES | Arezo Purmand | Detection and Typing of Microorganisms |
| P425 | 714 | GENETIC DIVERSITY OF XANTHOMONAS ARBORICOLA PV. JUGLANDIS THE CAUSAL AGENT OF WALNUT BACTERIAL BLIGHT | Aysan Heydari | Detection and Typing of Microorganisms |
| P426 | 719 | CHARACTERIZATION OF ENTEROCOCCUS SPP. IN DIABETIC FOOT INFECTIONS | Jalal Mardaneh | Detection and Typing of Microorganisms |
| P427 | 741 | THE FREQUENCY OF BACTERIAL AGENT IN NASOLACRIMAL DUCT OBSTRUCTION IN OPHTHALMIC CLINICS AT KASHAN | Ali Nazari Alam | Detection and Typing of Microorganisms |

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| P428 | 744 | MOLECULAR DETECTION OF B-LACTAMASE AND INTEGRON GENES IN CLINICAL STRAINS OF KLEBSIELLA PNEUMONIAE BY MULTIPLEX POLYMERASE CHAIN REACTION | Mansour Sedighi | Detection and Typing of Microorganisms |
| P429 | 745 | MOLECULAR INVESTIGATION OF VIRULENCE FACTORS OF BRUCELLA MELITENSIS AND BRUCELLA ABORTUS STRAINS ISOLATED FROM CLINICAL AND NON-CLINICAL SAMPLES | Mansour Sedighi | Detection and Typing of Microorganisms |
| P430 | 756 | GENETIC DIVERSITY AND METHICILLIN RESISTANCE IN STAPHYLOCOCCUS AUREUS ISOLATES FROM BUFFALOES WITH MASTITIS | Mitra Panahi | Detection and Typing of Microorganisms |
| P431 | 757 | DEVELOPMENT OF A LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) ASSAY FOR DETECTION OF PSEUDOMONAS AERUGINOSA IN CLINICAL SAMPLES FROM ANIMALS AND HUMAN | Shadi Mohammadi | Detection and Typing of Microorganisms |
| P432 | 767 | COMPARATIVE VIRULOTYPING AND PHYLOGENOMICS OF ESCHERICHIA COLI ISOLATES FROM URINE SAMPLES OF MEN AND WOMEN SUFFERING URINARY TRACT INFECTIONS | Hamid Staji | Detection and Typing of Microorganisms |
| P433 | 769 | INVESTIGATION, DETECTION AND GENOTYPING OF CLINICAL SAMPLES OF ACINETOBACTER BAUMANNII USING PCR AND ERIC-PCR. | Maryam Adabi | Detection and Typing of Microorganisms |
| P434 | 782 | PREVALENCE OF CLASS I AND II INTEGRONS AMONG UROPATHOGENIC ESCHERICHIA COLI CLINICAL ISOLATES | Zohre Sarparast | Detection and Typing of Microorganisms |
| P435 | 784 | DEVELOPING AND BIOSYNTHESIS OF SPECIFIC EASE-OF-USE NANOPROBES FOR DIRECT DIAGNOSIS OF A NEGLECTED OPPORTUNISTIC PATHOGEN | Mohammad Heidari | Detection and Typing of Microorganisms |

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| P436 | 814 | DESIGNING AND CONSTRUCTING AN ELECTROCHEMICAL GENOSENSOR WITH HIGH SENSITIVITY FOR THE RAPID DETECTION OF ESCHERICHIA COLI | Nahid Shoaie | Detection and Typing of Microorganisms |
| P437 | 839 | VBNC BACTERIA AND DIAGNOSTIC PROBLEMS | Seyyed reza Hashemi miyan abad | Detection and Typing of Microorganisms |
| P438 | 922 | DETECTION OF CATTLE BRUCELLOSIS BY PCR AND IELISA | Jalal Mardaneh | Detection and Typing of Microorganisms |
| P439 | 947 | PREVALENCE OF HUMAN PAPILLOMA VIRUS IN PATIENTS WITH COLORECTAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS | Ebrahim Faghihloo | Detection and Typing of Microorganisms |
| P440 | 968 | MOLECULAR DETECTION OF HELICOBACTER PYLORI IN PROSTATE CANCER AND HYPERPLASIA PATIENTS COMPARED WITH HEALTHY PEOPLE | MOHAMMAD SHOLEH | Detection and Typing of Microorganisms |
| P441 | 985 | DESIGN AND DEVELOPMENT OF A TAQMAN REAL-TIME PCR ASSAY FOR DETECTION AND QUANTIFICATION OF HIV-1 | Hassan Noorbazargan | Detection and Typing of Microorganisms |
| P442 | 994 | RAPID PCR DETECTION OF MYCOPLASMA SPP MATERNAL INFECTION. | Sakineh Monzavi | Detection and Typing of Microorganisms |
| P443 | 1023 | EVALUATING THE FREQUENCY OF BLOOD CULTURE POSITIVE RATE IN VALI-E-ASR HOSPITAL IN BIRJAND | Mahdiye sadat Ghotbani | Detection and Typing of Microorganisms |
| P444 | 1028 | COAGULASE GENE TYPING IN CLINICAL ISOLATES OF STAPHYLOCOCCUS AUREUS, THE IMPORTANCE OF C5 COA TYPE IN ISOLATES WITH TETRACYCLINE AND AMINOGLYCOSIDE RESISTANCE ENCODED GENES | Seyed Sajjad Khoramrooz | Detection and Typing of Microorganisms |

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| P445-P555 | | | روز دوم ساعت ۸:۳۰-۹:۴۵ | |
| P445 | 1065 | DETERMINATION OF INTESTINAL ESCHERICHIA COLI PATHOTYPES FREQUENCY IN TEHRAN PROVINCE BY PCR | Mohammad Hossein Zarei | Detection and Typing of Microorganisms |
| P446 | 1118 | MOLECULAR TYPING OF SALMONELLAISOLATES BY REP-PCR | Abolfazl Rafati zomorodi | Detection and Typing of Microorganisms |
| P447 | 1127 | LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) ASSAY AS A CONFIRMATORY TOOLS FOR ENTEROCOCCUS SPECIES | Masoud Yousefi | Detection and Typing of Microorganisms |
| P448 | 1135 | DETERMINATION OF AFLATOXIN BIOSYNTHESIS GENES IN AFLATOXIGENIC SPECIES OF ASPERGILLUS BY PCR METHOD | Nooshin Sohrabi | Detection and Typing of Microorganisms |
| P449 | 1146 | EVALUATION OF SPECIFIC ANTIBODY AGAINST MYCOBACTERIUM TUBERCULOSIS RECOMBINANT PROTEIN FOR EARLY DIAGNOSIS OF TUBERCULOSIS | Nooshin Sohrabi | Detection and Typing of Microorganisms |
| P450 | 1149 | DESIGN AND APPLICATION OF A PCR ASSAY FOR DETECTION OF TICK BORNE RELAPSING FEVER | Faezeh Houman sadr | Detection and Typing of Microorganisms |
| P451 | 17 | THE EFFECT OF AQUEOUS AND METHANOL EXTRACTS OF LAVENDER AGAINST GREEN MOLD ORANGE PATHOGEN CAUSED BY PENICILLIUM DIGITATUM | Jalal Gholamnejad | Food Microbiology |
| P452 | 18 | THE EVALUATION OF AQUEOUS AND METHANOL EXTRACTS EFFECT OF FENNEL AGAINST PENICILLIUM DIGITATUM ON ORANGE | Jalal Gholamnejad | Food Microbiology |
| P453 | 21 | CHECK AND COMPARE THE BIOFILM FORMATION OF PATHOGENIC BACTERIA IN MILK | Hojjat Azad | Food Microbiology |

| Code | ID | Title | Submission Author | Session |
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| P454 | 37 | ANTIBACTERIAL ACTIVITY AND PHYTOCHEMICAL CONSTITUENTS OF PELARGONIUM GRAVEOLENS L. AND ARTEMISIA SIEBERI L. ORGANIC EXTRACTS AGAINST ISOLATED PHYTOPATHOGENS FROM TOMATO IN VITRO | Elham Sharifi | Food Microbiology |
| P455 | 48 | CLINICAL AND PARACLINICAL EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN THE WESTERN CITIES AREA OF KERMANSHAH PROVINCE ,WEST IRAN | Narges Babevey | Food Microbiology |
| P456 | 70 | MICROALGAE AS FOOD | Fateme Rezaie ashtiani | Food Microbiology |
| P457 | 76 | PATHOGENIC BACTERIA AEROMONAS HYDROPHILA AND ITS COMMUNICATING WITH FOOD | Samira Fayazfar | Food Microbiology |
| P458 | 82 | ISOLATION OF STAPHYLOCOCCUS AUREUS IN TRADITIONAL SHEEP'S CHEESE IN LIGHVAN ZONE AT EAST AZERBAIJAN, IRAN | Parisa Abedi elkhichi | Food Microbiology |
| P459 | 85 | MICROBIAL CONTAMINATION OF TRADITIONAL PITCHER CHEESES IN TABRIZ AREA, EAST AZERBAIJAN,IRAN. | Ramin Hosseinzadeh | Food Microbiology |
| P460 | 100 | MICROBIAL CONTAMINATION INVESTIGATION OF FOOD SUPPLY IN THE FUEL CENTER RESTAURANT IN TEHRAN CITY | Giti Kashi | Food Microbiology |
| P461 | 104 | EVALUATION OF ANTIMICROBIAL ACTIVITY OF LACTOBACILLI ISOLATED FROM DAIRY PRODUCTS AGAINST PATHOGENIC BACTERIA | Anahita Barghi | Food Microbiology |
| P462 | 121 | ANTIMICROBIAL EFFECTIVENESS OF BILAYER NANOCOMPOSITE CELLULOSE-CHITOSAN FILMS CONTAINING NISIN AGAINST LISTERIA MONOCYTOGENES IN VITRO | Elahe Divsalar | Food Microbiology |

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| P463 | 128 | MICROBIOLOGICAL QUALITY OF A TRADITIONAL FERMENTED FISH PRODUCT (SOORAKH) OF IRAN | Ali Taheri | Food Microbiology |
| P464 | 153 | EVALUATION OF ANTIBACTERIAL ACTIVITY, PHYTOCHEMICAL SCREENING ETHANOLIC EXTRACT OF LEAVES OF ADIANTUM CAPILLUS-VENERIS L. FROM TONEKABON – IRAN | Sanaz Nikoumanesh | Food Microbiology |
| P465 | 154 | EVALUATION OF ANTIBACTERIAL ACTIVITY, TOTAL PHENOLIC AND FLAVONOIDS CONTENT OF METHANOLIC EXTRACT OF LEAVES OF NASTURTIUM OFFICINALE FROM TONEKABON – IRAN | Sanaz Nikoumanesh | Food Microbiology |
| P466 | 155 | IN VITRO ANTIOXIDANT, ANTIBACTERIAL ACTIVITY OF METHANOLIC EXTRACT OF MENTHA PULEGIUM FROM RAMSAR - IRAN | Sanaz Nikoumanesh | Food Microbiology |
| P467 | 164 | INVESTIGATING THE ANTIFUNGAL EFFECT OF IRANIAN CHESTNUT FLOUR ON PENICILLIUM EXPANSUM AND ASPERGILLUS NIGER | Fatemeh Dadmarzi | Food Microbiology |
| P468 | 174 | ANTIBACTERIAL ACTIVITY AND MICROSCOPIC PROPERTIES OF CHITOSAN-CELLULOSE BILAYER FILM CONTAINING MONOLAURIN | Mohammad Lotfi | Food Microbiology |
| P469 | 222 | EVALUATION OF MICROBIAL CONTAMINATION IN MOZZARELLA CHEESES IN WEST AZARBAIJAN PROVINCE OF IRAN DURING 2015 TO 2017 | Maryam Abbasi ghaznag | Food Microbiology |
| P470 | 229 | ASSESSMENT OF MICROBIOLOGICAL QUALITY OF POTABLE WATER DISTRIBUTED IN BUSES OF PASSENGER STATION REVOLUTION OF ZAHEDAN, IRAN | Asma Teymuri | Food Microbiology |

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| P471 | 238 | ANTIMICROBIAL ACTIVITIES OF SCANDIX PECTEN-VENERIS L. | Javad Sharifi Rad | Food Microbiology |
| P472 | 252 | GENOMIC DETECTION OF MYCOBACTERIUM IN RAW AND UNPASTEURIZED COW MILK OF TRADITIONAL DOMESTIC DAIRY PRODUCTS VENDORS IN KHORRAMABAD | Sepideh Asadi | Food Microbiology |
| P473 | 257 | DETECTION OF GIARDIA LAMBLIA INFECTION AMONG 1-10 YEAR-OLD CHILDREN IN NORTHWEST OF IRAN | Mohammad Taghi Ahady | Food Microbiology |
| P474 | 275 | STUDY OF PHYTOCHEMICAL AND MICROBIOLOGICAL ACTIVITY OF THYMUS VULGARIS L. ESSENTIAL OIL UNDER LEAD STRESS | Mehdi Simaei | Food Microbiology |
| P475 | 286 | THE CORYNEBACTERIUM GLUTAMICUM, AN INDUSTRIAL WORKHORSE FOR PRODUCTION OF L-LYSINE: A REVIEW OF ADVANCES, IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH | Ali Nemati | Food Microbiology |
| P476 | 313 | THE STUDY OF ANTIBACTERIAL EFFECT OF CHITOSAN FILM INCLUDING LAVANDULA STOECHAS ON GROWTH OF VIBRIO PARAHAEMOLYTICUS, ECOLI O157 H7,LISTERIA MONOCYTOGENESIS ,STAPHYLOCOCCUS AREUSE BY DISC DIFFUSION METHOD | Zohreh Mashak | Food Microbiology |
| P477 | 321 | BIOFILM FORMATION BY PSYCHOTROPHIC BACTERIA ISOLATED FROM BULK MILK TANKS AND DAIRY PROCESSING EQUIPMENTS | Rasoul Rezapour takanlou | Food Microbiology |
| P478 | 322 | OPTIMIZATION OF FERMENTATION CONDITIONS TO GENERATE PROTEIN HYDROLYSATES WITH INHIBITORY ACTIVITIES AGAINST BACILLUS CEREUS AND ESCHERICHIA COLI O157: H7 | Ali Moayedi | Food Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P479 | 323 | DIVERSITY OF BACILLUS SPECIES ISOLATED FROM BIOFILM OF RAW MILK TANKERS AND DAIRY PROCESSING EQUIPMENTS | Amir Hossein Ansari | Food Microbiology |
| P480 | 325 | ROLE OF COLIFORMS ON BIOFILM FORMATION IN RAW MILK TANKERS AND DAIRY PROCESSING EQUIPMENT | Shalale Zahediniya | Food Microbiology |
| P481 | 330 | INVESTIGATING THE EFFECT OF GRAM-NEGATIVE BACTERIA ON FOOD-BORN DISEASES | Yahya Hesari | Food Microbiology |
| P482 | 331 | INVESTIGATING THE EFFECT OF GRAM-POSITIVE BACTERIA ON FOOD-BORN DISEASES | Yahya Hesari | Food Microbiology |
| P483 | 344 | MICROBIOLOGICAL QUALITY OF DIFFERENT READY-TO-EAT FOODS ON MANUFACTURES AND HYPERMARKETS OF ALBORZ PROVINCE-IRAN | Zohreh Mashak | Food Microbiology |
| P484 | 353 | TOXIGENIC CLOSTRIDIUM PERFRINGENS FROM SHEEP MEAT RAW OF BUTCHERS KERMAN PROVINCE BY MULTIPLEX POLYMERASE CHAIN REACTION | Mehrdad Shamsaddini Bafti | Food Microbiology |
| P485 | 377 | ANTIMICROBIAL SUSCEPTIBILITY OF COAGULASE NEGATIVE STAPHYLOCOCCUS ISOLATED FROM PASTRIES | Laleh Hoveyda | Food Microbiology |
| P486 | 385 | INVESTIGATION THE PREVALENCE OF LISTERIA MONOCYTOGENES IN DISTRIBUTED CHICKENS AT STORES OF AHVAZ CITY | Fatemeh Beiranvand | Food Microbiology |
| P487 | 386 | ASSESSMENT OF MICROBIAL CONTAMINATION IN READY-TO- EAT VEGETABLES AND SALADS | Fatemeh Asadi pashang | Food Microbiology |
| P488 | 387 | ANTIBACTERIAL EFFECT OF AQUEOUS AND ETHANOLIC EXTRACTS OF SPIRULINA PLATENSIS | Nahid Najafian | Food Microbiology |

| Code | ID | Title | Submission Author | Session |
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| P489 | 391 | STUDY OF KOUPEH SHEEP CHEESE CONTAMINATION TO AFLATOXIN M1 IN MAHABAD CITY USING ELISA | Awat Ebrahim | Food Microbiology |
| P490 | 394 | RECOGNITION OF CLOSTRIDIUM BOTULINUM BACTERIA IN NUTRITION INDUSTRIES | Sogand Nayeri | Food Microbiology |
| P491 | 405 | REVIEW ON BACTERIAL FOODBORNE DISEASE | Milad Akbarzade | Food Microbiology |
| P492 | 411 | BIOPROTECTIVE CULTURES IN FRESH MEAT: A REVIEW | Mehdi Taheri | Food Microbiology |
| P493 | 421 | BIOCHEMICAL CHARACTERIZATION OF VARIOUS STRAINS OF PSEUDOMONAS TOLAASII THAT CAUSES MUSHROOM BROWN BLOTCH DISEASE IN IRAN | Kiomars Rouhrazi | Food Microbiology |
| P494 | 426 | ANTIMICROBIAL EFFECTS OF THYMES SHIRAZI HYDRO ALCOHOLIC ESSENTIAL OIL AND PISTACIA KAZERONI OIL ON STAPHYLOCOCCUS AUREUS | Tahmineh Dehdar | Food Microbiology |
| P495 | 430 | THE COMPARATIVE STUDY OF THE MOLECULAR SPECIES OF ANIMAL FEED AND POULTRY INFECTED WITH AFLATOXIN IN GONAABAD | Mansooreh Hooshiyar | Food Microbiology |
| P496 | 446 | INVESTIGATING THE EFFECT OF NON-BACTERIAL MICROORGANISMS ON DEVELOPING FOOD-BORN DISEASES | Yahya Hesari | Food Microbiology |
| P497 | 447 | IDENTIFICATION OF TRICHODERMA ISOLATES ON NORTH WEST IRAN MUSHROOM FARMS | Kiomars Rouhrazi | Food Microbiology |
| P498 | 466 | A SURVEY ON RESIDUES OF AFLATOXIN M1 IN LORK; AN IRANIAN TRADITIONAL DAIRY PRODUCT, USING ELISA | Hossein Emami | Food Microbiology |
| P499 | 473 | METHANOL EXTRACT OF MENTHA PIPERITA AS ANTIMICROBIAL AGENT | Morteza Yazdani | Food Microbiology |

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| P500 | 474 | EXTRACT FROM MENTHA LONGIFOLIA AS NATURAL ANTIMICROBIAL | Morteza Yazdani | Food Microbiology |
| P501 | 488 | THE EFFECT OF LIPASE IN MICROBIAL BIOTECHNOLOGY | Asma Charkhabi | Food Microbiology |
| P502 | 505 | EFFECTS OF ROSEMARY ESSENTIAL OILS AS A PRESERVATIVE IN HYPOPHTHALMICHTHYS MOLITRIX FILLETS | Mahdieh Vahedi | Food Microbiology |
| P503 | 509 | RAPID MOLECULAR DIAGNOSIS OF LACTOBACILLUS DELBRUECKII IN SOME PROBIOTIC, STARTER AND DAIRY PRODUCTS | sarvenaz Shojaei | Food Microbiology |
| P504 | 512 | EVALUATION OF THE PARASITES PRESENCE IN THE CONSUMED VEGETABLES FROM THE CITY OF YAZD, IN 2011-2012 | Somayeh Mousavi nodoushan | Food Microbiology |
| P505 | 515 | INVESTIGATION OF AMINOGLYCOSIDE RESISTANCE IN BIFIDOBACTERIA ISOLATED FROM DAIRY PRODUCTS IN SANANDAJ | Roya Darbani | Food Microbiology |
| P506 | 517 | ASSESSMENT OFMICROBIOLOGICAL QUALITY OF TRADITIONAL SWEETS IN YAZD IRAN IN 2017 | Somayeh Mousavi nodoushan | Food Microbiology |
| P507 | 520 | SURVEY OF TRADITIONAL ICE CREAM CONTAMINATION TO ESCHERICHIA COLI AND ENTEROBACTERIACEAE IN YAZD, IRAN DURING 2015-2016 | Somayeh Mousavi nodoushan | Food Microbiology |
| P508 | 535 | EFFECTS OF TRACHYSPERMUM COPTICUM ESSENTIAL OILS AS A PRESERVATIVE IN CYPRINUS CARPIO FILLETS | Samira Faramarzpoor | Food Microbiology |
| P509 | 574 | DETERMINATION OF FREQUENCY OF VIBRIO INFECTION IN PROCESSED SEAFOOD | Sarah Motealleh | Food Microbiology |

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| P510 | 649 | REDUCING MICROBIAL CORRUPTION AND INCREASING FOOD SECURITY WITH THE BIODEGRADABLE PACKAGING APPROACH | Mohammadamin Fosoungar | Food Microbiology |
| P511 | 650 | PREVALENCE AND ANTIBIOTIC RESISTANCE OF SHIGA TOXIGENIC ESCHERICHIA COLI ISOLATED FROM DAIRY PRODUCTS IN KASHAN, IRAN | Reza Sharafati chaleshtori | Food Microbiology |
| P512 | 669 | INVESTIGATION OF BACTERIAL CONTAMINATION OF KUBIDEH KEBAB SUPPLIED IN KHODABANDEH CITY | Nasim Biglari khoshmaram | Food Microbiology |
| P513 | 670 | ANTIMICROBIAL EFFECTS OF LACTOBACILLI LOCAL YOGURT ON IMPROTANT HUMAN PATHOGENS LIKE E.COLI AND S.AUREUS | Leila Amin dehghan | Food Microbiology |
| P514 | 676 | COXIELLA BURNETII IN MILKS IN THE IRAN; A SYSTEMATIC REVIEW AND META-ANALYSIS | Saber Esmaeili | Food Microbiology |
| P515 | 680 | DETOXIFICATION METHODS FOR AFLATOXIN CONTAMINATION | Masoumeh Khezripour | Food Microbiology |
| P516 | 711 | IMPROVEMENT OF FERMENTATION PERFORMANCE OF SACCHAROMYCES CEREVISIAE UNDER ANAEROBIC CONDITION USING ACCLIMATION AT HIGH TEMPERATURE | Rasoul Shafiei | Food Microbiology |
| P517 | 713 | ASSESSMENT OF VIABILITY AND FATTY ACID COMPOSITION OF ACETOBACTER SENEGALENSIS DURING HIGH STRENGTH ACETOUS FERMENTATION | Rasoul Shafiei | Food Microbiology |
| P518 | 734 | THE ROLE OF STAPHYLOCOCCUS AUREUS ENTEROTOXIN IN CAUSING FOOD POISONING | Behzad Jamali | Food Microbiology |

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| P519 | 777 | DETECTION OF MYCOTOXIN PATULIN IN PRODUCED JUICES MOST OF FACTORY IN TEHRAN | Naeimeh Naeimei | Food Microbiology |
| P520 | 803 | THE HIGH PREVALENCE AND ANTIMICROBIAL RESISTANCE OF STAPHYLOCOCCUS AUREUS ISOLATES FROM UNPACKED ICE CREAMS | Ramin Abri | Food Microbiology |
| P521 | 805 | ANTIFUNGAL EFFECTS OF TEA TREE ESSENTIAL OIL | Masoumeh Khezripour | Food Microbiology |
| P522 | 815 | ZEARALENONE ON IMMUNE RESPONSE (CYTOKINES, TH1 AND TH2) | Masoumeh Khezripour | Food Microbiology |
| P523 | 823 | INVESTIGATE A PLANT PRODUCT AS AN ANTIFUNGAL AGENT | Mohammad mahdi Zangeneh | Food Microbiology |
| P524 | 824 | CHEMICAL AND MICROBIOLOGICAL QUALITY OF RAW CAMEL MILK PRODUCED IN SEMNAN | Mahnoosh Parsaeimehr | Food Microbiology |
| P525 | 830 | MOLECULAR DETECTION OF METHICILLIN RESISTANT ENTEROTOXIN A PRODUCING STAPHYLOCOCCUS AUREUS IN PROFITEROLES IN KARAJ | Mahsa Makvandi | Food Microbiology |
| P526 | 832 | INTRODUCING AN ANTIMICROBIAL PRODUCT | Mohammad mahdi Zangeneh | Food Microbiology |
| P527 | 841 | IDENTIFICATION OF ESCHERICHIA COLI IN SAMPLES OF MEAT, DAIRY AND VEGETABLE BY PCR | Abbas Morovvati | Food Microbiology |
| P528 | 844 | IDENTIFICATION OF ENTROCOCCUS FAECALIS ISOLATED FROM DAIRY PRODUCTS IN QOM CITY | Abbas Morovvati | Food Microbiology |
| P529 | 848 | DETERMINE THE PREVALENCE, ANTIBIOTIC RESISTANCE, METHICILLIN-RESISTANT S. AUREUS (MRSA) AND METHICILLIN-RESISTANT COAGULASE-POSITIVE STAPHYLOCOCCI (MR-COPS) AMONG STAPHYLOCOCCUS AUREUS ISOLATED FROM READY-TO-EAT FOODS | Samaneh Tabibian | Food Microbiology |

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| P530 | 849 | EVALUATION OF MICROBIAL TOTAL COUNT AND PH IN MILK PRODUCTION IN INDUSTRIAL FARMS IN SOUTH KHORASAN PROVINCE | Fateme Sabaghzade | Food Microbiology |
| P531 | 861 | ISOLATION AND IDENTIFICATION OF LACTIC ACID BACTERIA FROM TRADITIONAL SOURDOUGH OF KHUZESTAN PROVINCE | Saeed Shalbaf | Food Microbiology |
| P532 | 869 | EFFECT SATUREJA EDMONDI ESSENTIAL OIL ON THE GROWTH OF STAPHYLOCOCCUS AUREUS IN A FOOD MODEL | Shirin Moradi | Food Microbiology |
| P533 | 888 | PREVALENCE OF STAPHYLOCOCCUS AUREUS IN CREAM FILLED PASTRIES DISTRIBUTED IN CONFECTIONARIES OF TABRIZ, IRAN | Mahdieh Heydarzadeh | Food Microbiology |
| P534 | 891 | PREVALENCE OF BACILLUS CEREUS IN CREAM FILLED PASTRIES DISTRIBUTED IN CONFECTIONARIES IN TABRIZ, IRAN | Mahdieh Heydarzadeh | Food Microbiology |
| P535 | 892 | CONTAMINATION OF LACTUCA SATIVA BUSHES IN FOOD PRODUCTS | Somayeh Allahkarami | Food Microbiology |
| P536 | 913 | THE CONTAMINATION OF CAPSICUMS IN THE NUMBER OF RESTAURANTS IN TEHRAN | Zeinab Yazdanpanah | Food Microbiology |
| P537 | 915 | EVALUATION OF MICROBIAL LOAD OF MILK PRODUCTION IN DAIRY FARMS AND MILK COLLECTION CENTERS IN KHOSF DISTRICT, SOUTH KHORASAN PROVINCE | Fateme Sabaghzade | Food Microbiology |
| P538 | 933 | ISOLATION AND MOLECULAR IDENTIFICATION OF CAROTENOID-PRODUCING BACTERIA | Sajjad Yazdansetad | Food Microbiology |
| P539 | 953 | ISOLATION AND IDENTIFICATION OF SALMONELLA ENTERICA SEROVARS, TYPHI, TYPHIMURIUM, AND ENTERITIDIS FROM RAW MILK AND DAIRY PRODUCTS | Tayebeh Zeinali | Food Microbiology |

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| P540 | 967 | PRESENTING AN ANTIBACTERIAL PRODUCT | Akram Zangeneh | Food Microbiology |
| P541 | 981 | DETERMINATION THE AMOUNT OF CONTAMINATION BRANNY WHEAT FLOUR SANGAK BAKERIES OF QOM TO AFLATOXIN B1 BY ELISA | Fatemeh Khaneh begi | Food Microbiology |
| P542 | 990 | DETECTION OF (SEA ) GENES IN AMONG METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS(MRSA )ISOLATED FROM CLINICAL SAMPLES IN ESFAHAN,IRAN | Parisa Behshood | Food Microbiology |
| P543 | 1027 | EVALUATION OF PSEUDOMONAS AERUGINOSA CONTAMINATION IN BOTTLED WATER SAMPLES IN THE CITY OF MASHHAD | MOHAMAD KHEZRI | Food Microbiology |
| P544 | 1044 | A SURVEY OF PROTEOLYTIC ACTIVITIES OF LACTIC ACID BACTERIA ISOLATED FROM IRANIAN DAIRY PRODUCTS | Tannaz Mirhadizadi | Food Microbiology |
| P545 | 1050 | NOMINATING AN ANTIBACTERIAL SUPPLEMENT | Mohammad mahdi Zangeneh | Food Microbiology |
| P546 | 1053 | IN VITRO ASSESSMENT OF ANTIBACTERIAL ACTIVITIES OF AQUEOUS EXTRACT OF SPINACIA OLERACEA AGAINST PSEUDOMONAS AERUGINOSA. | Akram Zangeneh | Food Microbiology |
| P547 | 1066 | EVALUATION OF ANTIBACTERIAL PROPERTIES OF ASHRESI DATE PALM HYDRO-ALCOHOLIC EXTRACT. | Mohammad mahdi Zangeneh | Food Microbiology |
| P548 | 1067 | IN VITRO STUDY ON ANTIBACTERIAL ACTIVITIES OF A MEDICINAL PLANT | Akram Zangeneh | Food Microbiology |
| P549 | 1068 | ASSESSMENT OF ANTIBACTERIAL EFFECTS OF GLYCYRRHIZA GLABRA AQUEOUS EXTRACT AGAINST STAPHYLOCOCCUS AUREUS WITH AGAR WELL DIFFUSION METHOD. | Akram Zangeneh | Food Microbiology |

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| P550 | 1075 | RAPID MOLECULAR DETECTION OF ASPERGILLUS FLAVUS BASED ON AFLATOXIN SYNTHESIS GENES IN CAKE POWDER | Sajedeh Barparveshan | Food Microbiology |
| P551 | 1078 | MOLECULAR ISOLATION AND IDENTIFICATION OF PROBIOTIC BACTERIA OF KEFIR AND STUDYING ITS ANTAGONISTIC PROPERTIES ON 5 FOODBORNE PATHOGENS | Matin Shafiee | Food Microbiology |
| P552 | 1087 | ISOLATION AND IDENTIFICATION OF SALMONELLA BACTERIA FROM POULTRY CARCASSES USING CULTURE, MOLECULAR AND SEROLOGICAL METHODS | Seyed mohammad Seyedin ghanad | Food Microbiology |
| P553 | 1101 | EVALUATION OF HMC LEVEL OF TOMATO PASTE PRODUCT IN KHORASAN RAZAVI PROVIENCE | MOHAMAD KHEZRI | Food Microbiology |
| P554 | 1111 | ANTIMICROBIAL ACTIVITY OF ESSENTIAL OIL OF A NATIVE PLANT FROM GORGAN | Sanaz Sadani | Food Microbiology |
| P555 | 1125 | STUDY OF ANTIBACTERIAL EFFECT OF FRUIT COCOS NUCIFERA ESSENTIAL OIL AGAINST SOME GRAM NEGATIVE AND GRAM POSITIVE BACTERIA | Ghasem Sanjarani | Food Microbiology |
| P556-P666 | | | روز دوم ساعت ۱۰:۰۰-۱۱:۱۵ | |
| P556 | 1130 | CALCULATE PISTACHIO AFLATOXIN REDUCTION DUE TO RADIOACTIVE GRANITE STONES | Azam Khanjamalie | Food Microbiology |
| P557 | 1140 | PREVALENCE OF CAMPYLOBACTER SPECIES IN RAW BOVINE MILK IN ISFAHAN, IRAN | Hamidreza Kazemeini | Food Microbiology |
| P558 | 1144 | DETECTION AND IDENTIFICATION OF CAMPYLOBACTER SPP.FROM RETAIL RAW CHICKEN, TURKEY, SHEEP AND GOAT MEAT IN AHVAZ, IRAN | Hamidreza Kazemeini | Food Microbiology |

| Code | ID | Title | Submission Author | Session |
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| P559 | 1145 | COMPARATIVE STUDY OF IMPEDANCE, CHROMOGENIC AND REFERENCE METHODS TO DETECT CONTAMINATION TO ENTEROCOCCI IN FOOD | Mahin Falah | Food Microbiology |
| P560 | 1148 | POWDERED INFANT FORMULA (PIF) MILK CONTAMINATED WITH ENTEROBACTER CLOACAE | Jalal Mardaneh | Food Microbiology |
| P561 | 1171 | PREVALENCE AND ANTIMICROBIAL RESISTANCE OF SALMONELLA ISOLATED FROM RETAIL RAW TURKEY , OSTRICH , AND PARTRIDGE MEAT IN IRAN | Hamidreza Kazemeini | Food Microbiology |
| P562 | 78 | REVIEW OF MICROBIAL PATTERN OBTAINED FROM DIABETIC FOOT ULCERS: A SYSTEMATIC REVIEW | Ahmad Mahmoodi kouhi | Microbial Metabolites and Diseases |
| P563 | 107 | THE ANTIMICROBIAL EFFECT OF HYDROALCOHOLIC EXTRACT OF OAK ON THE POSITIVE AND GRAM-NEGATIVE BACTERIA | Zahra Arbabi | Microbial Metabolites and Diseases |
| P564 | 144 | DISTRIBUTION OF VIRULENCE GENES, ENTEROTOXIN AND BIOFILM FORMATION AMONG ENTEROAGGREGATIVE ESCHERICHIA COLI (EAEC) STRAINS ISOLATED FROM STOOLS OF CHILDREN WITH DIARRHEA IN SOUTH EAST IRAN | Shakibaie Mohammad Reza | Microbial Metabolites and Diseases |
| P565 | 161 | ISOLATION, CHARACTERIZATION AND COMPARISON OF ANTI-CANCER EFFECT PROLINE DEHYDROGENASE ENZYME OF PSEUDOMONAS PRODUCING PROVINCE FARS WITH PROLINE DEHYDROGENASE RECOMBINANT PF-5 WILD-TYPE STRAIN (BAA- ATCC 477) | Fatemeh Jamali Emam gheis | Microbial Metabolites and Diseases |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P566 | 186 | EFFICACY OF NONTOXIC SALMONELLA AS THERAPEUTIC STRATEGY IN COLON CANCER CELLS | Mahshid Mohammadian | Microbial Metabolites and Diseases |
| P567 | 245 | EVALUATION AND COMPARISON OF PRODUCTION OF HYALURONIC ACID FROM STREPTOCOCCUS SALIVARIUS SUBSP. THERMOPHILUS AND ISOLATED STREPTOCOCCUS THERMOPHILUS SAMPLES FROM YOGHURT | Diba Tabatabaei | Microbial Metabolites and Diseases |
| P568 | 282 | ISOLATION AND CHARACTERIZATION OF MYXOBACTERIA PRODUCING ANTIMICROBIAL SUBSTANCES FROM DIVERS IRANIAN HABITATS | Zahra Khosravi babadi | Microbial Metabolites and Diseases |
| P569 | 299 | PEDERIN; A BACTERIAL TOXIN WITH THERAPEUTIC VALUES | Samane Heydari | Microbial Metabolites and Diseases |
| P570 | 312 | TRADITIONAL TREATMENT OF LEISHMANIASIS IN SOUTHERN IRAN | Mohammadreza Foroutani | Microbial Metabolites and Diseases |
| P571 | 374 | TUBERCULOSIS PRESENTING AS PLURAL AND ABDOMINAL INVOLVMENT IN HIV INFECTION: CASE REPORT OF IRAN | Sadaf Sabzevari | Microbial Metabolites and Diseases |
| P572 | 402 | EPIDEMIOLOGICAL STUDY OF HELICOBACTER PYLORI INFECTION IN REZVANSHAHR CITY | Seyedeh Tooba Shafighi | Microbial Metabolites and Diseases |
| P573 | 441 | A REVIEW OF THE ROLE OF MYCOBACTERIUM TUBERCULOSIS IN THE INDUCTION OF LUNG CANCER IN TB PATIENTS | Sara Lotfi | Microbial Metabolites and Diseases |
| P574 | 465 | INTRODUCING PROMICROMONOSPORA SP. UTMC 1326 AS AN EXOPOLYSACCHARIDE PRODUCING RARE ACTINOBACTERIUM AND EVALUATION OF ANTIMICROBIAL ACTIVITY OF THE EXOPOLYMER | Sogol Tavanaeyan | Microbial Metabolites and Diseases |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P575 | 522 | BACTERIA, FRIEND OR FOE: THE USE OF BACTERIA IN CANCER THERAPY | Shokooh Jahedi | Microbial Metabolites and Diseases |
| P576 | 524 | PROGNOSTIC VALUE OF SYSTEMIC TRIMETHYLAMINE-N-OXIDE LEVEL IN CARDIOVASCULAR PATIENTS | Attabak Toofani millani | Microbial Metabolites and Diseases |
| P577 | 529 | ISOLATION AND SCREENING OF MARINE LIVING ACTINOBACTERIA AS A SOURCE OF ACETYLCHOLINESTERASE INHIBITORS | Faezeh Almasi | Microbial Metabolites and Diseases |
| P578 | 543 | IN VITRO ANTI-DIABETIC ACTIVITY OF SECONDARY METABOLITES PRODUCED BY STREPTOMYCES ZAGROSENSIS | Manizheh Bakhtiyarizadeh | Microbial Metabolites and Diseases |
| P579 | 549 | ISOLATION AND IDENTIFICATION OF TWO ALKALOIDS WITH ANTIOXIDANT ACTIVITY FROM ACTINOKINEOSPORA SP. UTMC 968 | Bahareh Heidari | Microbial Metabolites and Diseases |
| P580 | 564 | INVESTIGATION OF RELATIONSHIP BETWEEN EPSTEIN-BARR VIRUS AND BARF-1 GENE CODED BY THE VIRUS WITH GASTRIC ADENOCARCINOMA | Sajjad Jamali | Microbial Metabolites and Diseases |
| P581 | 576 | TARGETED THERAPY OF PROSTATE CANCER BY ADOPTIVE MSCS TRANSDUCED WITH A FUSION PROTEIN EPCAM-DT | Pardis Saeedi | Microbial Metabolites and Diseases |
| P582 | 586 | COMPARISION HB A1C WITH FUNGUS ISOLATED FROM HEALTHY AND INVOLVEMENT TISSUE IN DIABETIC FOOT ULCER | Sara Kamalzadeh | Microbial Metabolites and Diseases |
| P583 | 626 | INVESTIGATION OF THE DAMAGE ON FUSARIUM OXYSPORUM BY BACILLUS AMYLOLIQUEFACIENSE M13-RW01 METABOLITES USING SCANNING ELECTRON MICROSCOPY | Marjan Jahanpanah | Microbial Metabolites and Diseases |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P584 | 633 | ARAZYME CLONING, EXPRESSION AND BIOLOGICAL ACTIVITY OF SERRATIA PROTEAMACULANS | Mona Shahpari | Microbial Metabolites and Diseases |
| P585 | 635 | PURIFICATION AND STUDY OF ANTI-CANCER EFFECTS OF SERRATIA MARCESCENS SERRALYSIN | Almas Araghi | Microbial Metabolites and Diseases |
| P586 | 640 | CORTISONE PROTECTS LYSOSOMAL DAMAGE IN ENDOTOXIN-INDUCED SHOCK IN WISTAR RATS | Shahdokht Rastegar | Microbial Metabolites and Diseases |
| P587 | 661 | NOSTOC CYANOBACTERIA SPECIES –A NEW AND RICH SOURCE OF NOVEL BIOACTIVE COMPOUNDS WITH PHARMACEUTICAL POTENTIAL | Bahareh Nowruzi | Microbial Metabolites and Diseases |
| P588 | 671 | STUDY ON FUNGI ACTIVE IN BIODETERIORATION OF ANCIENT BOOKS AT THE NATIONAL LIBRARY OF IRAN USING CULTURE METHODS | Bahare Hajirostamlo | Microbial Metabolites and Diseases |
| P589 | 678 | ANTIMICROBIAL EFFECTS OF ETHANOL EXTRACT OF PLANT EUPHORBIA SP ON STAPHYLOCOCCUS AUREUS AND ACINETOBACTER BAUMANNII IN VITRO | Mansoor Khaledi | Microbial Metabolites and Diseases |
| P590 | 701 | SOME CHARACTERIZATION OF ENTROAGGRIGATIVE ESCHERICHIA COLI STRAINS ISOLATED FROM DIARRHEA SAMPLES OF CHILDREN IN AHVAZ | Haifa Helalat | Microbial Metabolites and Diseases |
| P591 | 736 | MOLECULAR INVESTIGATION OF HELICOBACTER PYLORI INFECTION AND RELATION WITH FTO RS9939609 POLYMORPHISM IN TYPE 2 DIABETES | Nilofar Radmanesh | Microbial Metabolites and Diseases |
| P592 | 737 | ASSOCIATION OF MBL RS1800450 AND TNF A RS1800620 POLYMORPHISM WITH HELICOBACTER PYLORI IN TYPE II DIABETES MELLITUS | Hossein Rassi | Microbial Metabolites and Diseases |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P593 | 771 | ISOLATION AND MOLECULAR CHARACTERIZATION OF CHOLESTEROL OXIDASE FROM BREVIBACTERIUM SP. | Banafshe Hasanvand | Microbial Metabolites and Diseases |
| P594 | 807 | IN VITRO ASSESSMENT OF ANTIOXIDANT AND ANTIBACTERIAL ACTIVITIES OF METHANOLIC EXTRACT OF LEAVES OF PORTULACA OLERACEA L. | Fatemeh Safari | Microbial Metabolites and Diseases |
| P595 | 831 | DETECTION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS ISOLATED FROM BURN PATIENTS | Samira Ghaderi afshari | Microbial Metabolites and Diseases |
| P596 | 833 | ANTIBACTERIAL RESISTANCE AMONG METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS RECOVERED FROM INTENSIVE CARE UNIT (ICU) IN TEHRAN | Parnaz Abiri | Microbial Metabolites and Diseases |
| P597 | 859 | EVALUATING THE PREVALENCE OF BRUCELLOSIS BY ELISA AND WRIGHT METHODS IN PATIENTS REFERRING TO TABRIZ 29 BAHMAN HOSPITAL IN SUMMER 2014 | Yashar Bagherizadeh | Microbial Metabolites and Diseases |
| P598 | 864 | EVALUATING THE PREVALENCE OF BRUCELLOSIS DISEASE BY ELISA AND WRIGHT TEST IN PATIENTS REFERRED OSTAD ALINASAB HOSPITAL IN TABRIZ | Yashar Bagherizadeh | Microbial Metabolites and Diseases |
| P599 | 889 | STUDY OF APOPTOSIS INDUCING EFFECTS BY LISTERIA MONOCYTOGENES IN PANCREATIC CANCER CELL LINES WITH MEASURING BCL-2 GENE EXPRESSION VIA REAL TIME PCR | NASIM Felegari | Microbial Metabolites and Diseases |
| P600 | 901 | EVALUATION OF VIRULENCE MARKERS IN PSEUDOMONAS AERUGINOSA ISOLATES FROM INFECTED PATIENTS | Helia Nikoueeyan | Microbial Metabolites and Diseases |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P601 | 902 | VIRULENCE GENES OF THE PSEUDOMONAS AERUGINOSA ASSOCIATED WITH BOVINE MASTITIS | Helia Nikoueeyan | Microbial Metabolites and Diseases |
| P602 | 919 | THE INHIBITORY EFFECT OF THE FUNGAL ENDOPHYTE AUROBASIDIUM ON THE PATHOGEN ASPERGILLUS NIGER | Roya Erfandoust | Microbial Metabolites and Diseases |
| P603 | 920 | ISOLATION AND IDENTIFICATION ANTIBIOTICES PRODUCING ACTINOMYCES FROM BUSHEHR | Somayeh Soori | Microbial Metabolites and Diseases |
| P604 | 921 | ISOLATION AND IDENTIFICATION ANTIBIOTICES PRODUCING ACTINOMYCES FROM BUSHEHR COASTAL SPONGES | Somayeh Soori | Microbial Metabolites and Diseases |
| P605 | 937 | EVALUATION OF SOME EPIDEMIOLOGICAL FACTORS IN CHOLERA PATIENTS WERE REFERRED TO HEALTH CARE CENTER OF KHORASAN RAZAVI PROVINCE FROM 2002 TO 2012 | Hossein Mokhtari | Microbial Metabolites and Diseases |
| P606 | 956 | USE OF THYME IN REDUCING PATHOGENICITY OF AFLATOXINS IN HUMANS | Maliheh Farahani | Microbial Metabolites and Diseases |
| P607 | 1030 | SURVEY ON THE PREVALENCE OF TUBERCULOSIS IN BOOALI HOSPITAL IN ZAHEDAN FROM THE BEGINNING OF THE 92ND OF JULY TO 95TH | Maryam Harati | Microbial Metabolites and Diseases |
| P608 | 1108 | INHIBITORY EFFECT OF HALOBACTERIUM SALINARUM METABOLITE ON PROSTATE CANCER CELL LINES | Atefeh Safarpour | Microbial Metabolites and Diseases |
| P609 | 1116 | EFFECT OF METABOLITES FROM NATIVE HALOPHILIC STRAINS AGAINST METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS | Atefeh Safarpour | Microbial Metabolites and Diseases |
| P610 | 16 | EVALUATION OF SOME FACTORS ASSOCIATED TO BACILLI CALMETTE-GUERIN (BCG) LYMPHADENITIS IN VACCINATED INFANTS IN RAZAVI KHORASAN PROVINCE FROM 2009 TO 2013 | Hossein Mokhtari | Microbial Vaccines |

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|---|---|---|---|---|
| P611 | 69 | BORDETELLA PERTUSSIS FIM2 AND FIM3 EXPRESSION IN DIFFERENT STAGES OF CULTIVATION TO PRODUCE ACELLULAR PERTUSSIS VACCINE | Tayebe Latifi | Microbial Vaccines |
| P612 | 80 | SYNERGISTIC IMMUNOGENICITY OF A.BAUMANNII BAP AND FLAGELLIN ADJUVANT | Mozhgan Derakhshan sefidi | Microbial Vaccines |
| P613 | 102 | NEW DEVICE TO FACILITATE VACCINE DEVELOPMENT AND OTHER LAB TESTS | Saeideh Sadeghi nesat | Microbial Vaccines |
| P614 | 157 | CLONING AND EXPRESSION OF HUMAN INTERFERON ALPHA-2B IN ESCHERICHIA COLI AND PURIFYING WITH CHITTIN-INTEIN AFFINITY COLUMN | Sepideh Imani khameneh | Microbial Vaccines |
| P615 | 160 | CLONING AND PERIPLASMIC EXPRESSION OF RECOMBINANT HUMAN BETA INTERFERON IN ESCHERICHIA COLI | Mansoure Nakhaee | Microbial Vaccines |
| P616 | 179 | PRODUCTION OF HIGH AFFINITY VARIANT OF RECOMBINANT HUMAN GROWTH HORMONE BY GENETIC MANIPULATION OF THE MOLECULE | Shima Bahador | Microbial Vaccines |
| P617 | 220 | STUDY OF CORRELATION BETWEEN THE RESULTS OF QUALITY CONTROL OF BCG VACCINE PRODUCED IN IRAN | Rasul Moukhah | Microbial Vaccines |
| P618 | 226 | THE CONCENTRATION AND PURIFICATION OF RABIES VIRUS (PV STRAIN) BY TANGENTIAL FLOW FILTRATION AND ITS EFFECT ON VACCINE POTENCY | Zohre Eftekhari | Microbial Vaccines |
| P619 | 240 | FUSION OF CLOSTRIDIUM PERFRINGENS TYPE D EPSILON TOXIN GENE AND CLOSTRIDIUM SEPTICUM ALPHA TOXIN GENE USING FUSION PCR | Marzieh Kamalirousta | Microbial Vaccines |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P620 | 244 | EVALUATION THE RELATION BETWEEN ALZHEIMER'S DISEASE AND ANTI-MICROBIAL TOXIN'S VACCINATION IN ELDERLY INDIVIDUALS | Samane Heydari | Microbial Vaccines |
| P621 | 284 | COMPARISION OF CYTOPATHIC EFFECT (CPE) AND HEMADSORPTION (HAD) METHODS OF POTENCY ESTIMATION OF VARIOUS MUMPS VACCINE STRAINS AND PRODUCTS | Saeedreza Pakzad | Microbial Vaccines |
| P622 | 300 | RECENT ADVANCES IN UROPATHOGENIC ESCHERICHIA COLI (UPEC) VACCINE DEVELOPMENT | Narges Nooritalab | Microbial Vaccines |
| P623 | 308 | SYSTEMIC CYTOKINE PROFILES IN BALB/C MICE IMMUNIZED WITH AN ORALLY VACCINE CANDIDATE AGAINST GAS GANGRENE AND NECROTIC ENTERITIS, LC-ALPHA STRAIN | Mojtaba Alimolaei | Microbial Vaccines |
| P624 | 315 | EVALUATION OF THE EUKARYOTIC EXPRESSION OF MTB32C-HBHA FUSION GENE OF MYCOBACTERIUM TUBERCULOSIS IN HEPATOCARCINOMA CELL LINE | Roghayeh Teimourpour | Microbial Vaccines |
| P625 | 334 | CO EXPRESSION OF HBHA AND MTB32C GENES FROM MYCOBACTERIUM TUBERCULOSIS H37RV IN PROKARYOTIC SYSTEM | Roghayeh Teimourpour | Microbial Vaccines |
| P626 | 336 | ISOLATION,CLONING AND MOLECULAR ANALYSIS OF AG85A AND TB10.4 GENES FROM MYCOBACTERIUM TUBERCULOSIS | Roghayeh Teimourpour | Microbial Vaccines |
| P627 | 361 | IN SILICO DESIGN AND ANALYSIS OF FUSION PROTEIN CONTAINING VIRULENCE FACTOR OF PSEUDOMONAS AERUGINOSA AS A VACCINE CANDIDATE | Sargol Aminnezhad | Microbial Vaccines |

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| P628 | 367 | NATURAL IMMUNITY TO MENINGOCOCCUS IN SPLENECTOMIZED AND NON-SPLENECTOMIZED MAJOR BETA THALASSEMIA PATIENTS | Abdolreza Sotoodeh | Microbial Vaccines |
| P629 | 368 | IMMUNITY LEVEL TO DIPHTHERIA IN BETA-THALASSEMIA PATIENTS | Abdolreza Sotoodeh | Microbial Vaccines |
| P630 | 398 | SURFACE DISPLAY OF IMMUNOGENIC EPITOPES OF CLOSTRIDIUM PERFRINGENS ON THE BACILLUS SUBTILIS AS A POTENTIAL LIVE VACCINE FOR NECROTIC ENTERITIS | Sara Heidarpanah | Microbial Vaccines |
| P631 | 414 | RECOMBINANT LACTOCOCCUS LACTIS SECRETING INDUCIBLE EXPRESSED FUNCTIONAL LISTERIOLYSIN O | Masoumeh Hayati | Microbial Vaccines |
| P632 | 427 | EXPRESSION AND PURIFICATION THE MRPA PROTEIN OF PROTEUS MIRABILIS AS A NEW TARGET AGAINST URINARY TRACT INFECTIONS | Ehsan Choubini | Microbial Vaccines |
| P633 | 479 | EVALUATION OF MICE HUMORAL IMMUNE RESPONSES AGAINST VACCINAL STRAIN OF BACILLUS ANTRASIS | Seid reza Ahmadinia | Microbial Vaccines |
| P634 | 511 | OPTIMIZATION OF HA TEST (HEMAGGLUTINATION ASSAY) FOR DETECTING FILAMENTOUS HEMAGGLUTININ ANTIGEN AND COMPARISON THIS TECHNIQUE WITH ELISA | BOYOUK AGHA TANHA | Microbial Vaccines |
| P635 | 531 | CLONING, EXPRESSION, AND PRODUCTION OF RECOMBINANT VIRB6 OF BRUCELLA ABORTUS | Nastaran Banimahd | Microbial Vaccines |
| P636 | 538 | HEMAGGLUTININ ANTIGEN CONTENT OF THREE DIFFERENT TYPES OF INFLUENZA VACCINES | Saeedreza Pakzad | Microbial Vaccines |

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| P637 | 539 | CLONING OF A MULTI-EPITOPE FUSION PROTEIN OF HELICOBACTER PYLORI FOR EXPRESSION IN LETTUCE | Atousa Aliahmadi | Microbial Vaccines |
| P638 | 567 | PRODUCTION OF A NEW CHIMERIC FUSION PROTEIN CONTAINIG OF CLOSTRIDIUM PERFRINGENS TYPE D EPSILON TOXIN AND CLOSTRIDIUM SEPTICUM ALPHA TOXIN GENES | Zhina Mazhari | Microbial Vaccines |
| P639 | 568 | ISOLATION OF SALMONELLA TYPHI CAPSULAR ANTIGEN TY2 AND ANIMAL TESTING IN ORDER TO PRODUCE VACCINES | Sajjad Jamali | Microbial Vaccines |
| P640 | 592 | DESIGN AND CONSTRUCTION OF SUICIDE VECTOR PBLUESCRIPTSK-GFPΔKANR TO ANALYZE THE GENE DELETION IN THE BRUCELLA MELITENSIS REV1 MUTANT STRAIN | Elham Mehdizadeh marzenaki | Microbial Vaccines |
| P641 | 653 | ESCHERICHIA COLI EXPRESSION AND PROCESS OPTIMIZATION OF EPEX ANTIGEN AS A SUITABLE TARGET FOR THERAPEUTIC VACCINATION | Farideh Rasouli kery bozorg | Microbial Vaccines |
| P642 | 725 | IDENTIFICATION OF ADHESIVE FACTORS IN MULTIDRUG-RESISTANT ACINETOBACTER BAUMANNII | Razie Abdolhamidi | Microbial Vaccines |
| P643 | 793 | IDENTIFICATION OF THE SEROTYPES OF BACTERIAL MENINGITIS AGENTS; IMPLICATION FOR VACCINE USAGE | Mohammad Mehdi Attarpour Yazdi | Microbial Vaccines |
| P644 | 965 | PREVALENCE OF SERUM ANTIBODIES AGAINST MEASLES, RUBELLA, HBV, CMV AND VZV IN BABOL MEDICAL STUDENTS. | Yousef Yahyapour | Microbial Vaccines |
| P645 | 970 | EVALUATION OF SEROLOGIC TESTS AFTER INJECTION OF BRUCELLOSIS VACCINE STRAIN REV.1 IN SHEEP | Sajad Dostdari | Microbial Vaccines |

| Code | ID | Title | Submission Author | Session |
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| P646 | 1041 | EXPRESSION AND PURIFICATION THE YERSINIABACTIN IRON RECEPTOR OF UROPATHOGENIC ESCHERICHIA COLI ISOLATES AS A TARGET AGAINST URINARY TRACT INFECTION | Mohammad Reza Asadi Karam | Microbial Vaccines |
| P647 | 1042 | CLONING AND PURIFICATION THE FLAGELLIN (FLIC) PROTEIN OF PROTEUS MIRABILIS ISOLATES AS AN ADJUVANT IN VACCINES AGAINST URINARY TRACT INFECTION | Mehri Habibi | Microbial Vaccines |
| P648 | 1048 | EFFICACY OF WHOLE CELL PNEUMOCOCCAL VACCINE IN MICE: A SYSTEMATIC REVIEW | Mona Mohammadzadeh | Microbial Vaccines |
| P649 | 1124 | CHARACTERISTIC HOMOGENEITY WITHIN IRANIAN MYCOPLASMA AGALACTIAE VACCINE STRAINS OF TALIQAN, LORESTAN AND SHIRAZ REVEALED BY MOLECULAR GENOTYPING | Khatereh Kabiri | Microbial Vaccines |
| P650 | 29 | MULTIPLE SCLEROSIS AND MICROBIOME: ARE THEY CONNECTED ? | Saman Esmaeilnejad | Microbiomes |
| P651 | 39 | DISREGARDED BUT VALUABLE: NEURODEGENERATION IS IN CLOSE RELATIONSHIP WITH MICROBIOTA. | Saman Esmaeilnejad | Microbiomes |
| P652 | 77 | PREVALENCE OF DICROCOELIUM DENDRITICUM PARASITES IN THE LIVERS OF SLAUGHTERED LIVESTOCK IN THE SLAUGHTERHOUSE OF DEZFUL IN 2015 | Ahmad Mahmoodi kouhi | Microbiomes |
| P653 | 88 | A REVIEW STUDY OF VIRAL INHIBITORS OF IFN-Γ-JAK–STAT SIGNAL TRANSDUCTION AND INDUCTION OF MHC CLASS II GENE EXPRESSION | Saeideh Ghaffarzadeh | Microbiomes |

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| P654 | 89 | BIOINFORMATIC ANALYSIS OF TIG PROTEIN IN LACTOBACILLUS FERMENTUM | Saeideh Ghaffarzadeh | Microbiomes |
| P655 | 90 | EVALUATION OF A DIFFERENT FREQUENCY MAGNETIC FIELD ON THE GROWTH AND METABOLIC CHANGES IN SOME GRAM-POSITIVE AND GRAM NEGATIVE BACTERIA IN VITRO | Mojtaba Moradi | Microbiomes |
| P656 | 217 | EPIGENETIC MODIFICATION OF ALLERGIC ASTHMA BY GUT MICROBIOTA | Fatemeh Hajighasemi | Microbiomes |
| P657 | 260 | DIAGNOSIS OF BURDETELLAPERTUSIS&PARA PERTUSISFROM COLLECTING SAMPLEHOSPITALS QAZVIN PROVINCE IN 3 TIMES&COMPARISON WITH TOGETHER. | Samira Parhizkari | Microbiomes |
| P658 | 261 | INVESTIGATION EPIDEMIOLOGY IN SILENT CARRIERS OF MALARIA IN 800 EMIGRANTS AND COMPARISON THOSE WITH IRANIAN PATIENTS IN DURING 10 YEARS IN NEONATS OF QAZVIN CITY | Mina Elhamkia | Microbiomes |
| P659 | 399 | MOLECULAR DETECTION OF GUT BACTERIA LACTOBACILLUS, BIFIDOBACTERIA, CLOSTRIDIUM DIFFICILE AND YEAST IN BOWEL DISEASE AND CONTROL PATIENTS | Mahtab Eivazi | Microbiomes |
| P660 | 410 | THE ANTIBACTERIAL AND ANTIFUNGAL ACTIVITY OF LEAVES AND FRUITS OF HYOSCYAMUS SENECIONIS WILLD. | Masoumeh Nowrouzi | Microbiomes |
| P661 | 445 | INVESTIGATING THE EFFECTS OF PROBIOTICS SUPPLEMENTATION ON LIPID PROFILE AND INFLAMMATORY BIOMARKERS IN PATIENTS WITH METABOLIC SYNDROME (REVIEW OF HUMAN STUDIES) | Yahya Hesari | Microbiomes |

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| P662 | 559 | ANTIMICROBIAL EFFECTS OF SEEDS AND STEMS OF HYOSCYAMUS SENECIONIS WILLD. | Masoumeh Nowrouzi | Microbiomes |
| P663 | 663 | INTRODUCE OF TWO IMPORTANT BACTEROIDES SPP. DERIVED OUTER MEMBRANE VESICLES (OMVS) AS ALTERNATIVE PROBIOTIC CANDIDATES | Sara Ahmadi Badi | Microbiomes |
| P664 | 695 | THE FIRST REPORT OF AKKERMANSIA MUCINIPHILA AND FAECALIBACTERIUM PRAUSNITZII ABUNDANCE IN OBESE IRANIAN POPULATION | Fateme Ettehad marvasti | Microbiomes |
| P665 | 742 | ISOLATION OF AKKERMANSIA MUCINIPHILA AND FAECALIBACTERIUM PRAUSNITZII FROM STOOL SAMPLES OF IRANIAN PEOPELS | Mina sadat Taghavi | Microbiomes |
| P666 | 762 | COMPOSITION OF GUT MICROBIOTA IN PEOPLE WITH TYPE II DIABETES | Fatemeh Navab moghaddam | Microbiomes |
| P667-P777 | | | روز دوم ساعت ۱۱:۳۰-۱۲:۴۵ | |
| P667 | 799 | COMPARISION OF CHANGES ENTEROCOCCUS FAECALIS IN PATIENTS WITH POLYPS AND COLON CANCER WITH NORMAL PEARSONS | Maryam Geravand | Microbiomes |
| P668 | 801 | COMPARISION OF LACTOBACILLUS ACIDOPHILUS AND LACTOBACILLUS PLANTARUM CHANGING IN PATIENTS WITH POLYPS AND COLON CANCER WITH NORMAL PERSONS | Nazi Zinatizadeh | Microbiomes |
| P669 | 884 | ANTIBACTERIAL EFFECT OF ESSENTIAL OIL, AQUEOUS AND ALCOHOLIC EXTRACT OF FERULAGO ANGULATA ON STAPHYLOCOCCUS AUREUS GROWTH ISOLATED FROM SUBCLINICAL MASTITIS, IN VITRO STUDY | Sara Hasanvand | Microbiomes |

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| P670 | 964 | THE INTRODUCTION OF BACTEROIDES FRAGILIS OUTER MEMBRANE VESICLES AS NEW OBESITY TREATING CANDIDATES: FOCUS ON IMPROVEMENT OF FASTING-INDUCED ADIPOSE FACTOR AND TIGHT JUNCTIONS EXPRESSION IN CACO-2 CELL LINE | Sara Ahmadi Badi | Microbiomes |
| P671 | 976 | ASSOCIATION BETWEEN THE MICROBIOME AND MULTIPLE SCLEROSIS | Shirin Dashtbin | Microbiomes |
| P672 | 1035 | ASSOCIATION BETWEEN BODY MASS INDEX AND FECAL CONCENTRATION OF FIRMICUTES AND BACTEROIDETES IN IRANIAN ADULTS | Hanieh Sadat Ejtahed | Microbiomes |
| P673 | 1063 | EVALUATION OF OROPHARYNX MICROBIOTA AMONG OF CHILDREN 3-6 YEARS OLD BY CULTURE METHOD IN ILAM CITY 2015-2016 | Maryam Zamirnata | Microbiomes |
| P674 | 53 | THE EFFECT OF EVALUATION BACTERIOCIN PLANTARICIN A IS ENCAPSULATED WITHIN THE NANOFIBER POLYVINIL ALCOHOL/CITOSAN ON STAPHYLOCOCCUS AUREUS | Maedeh Jahangir bolourchian | Nanomicrobiology |
| P675 | 93 | THE ANTI BACTERIAL EFFECT OF ZNO ON HOSPITAL BACTERIA | Soheila Arianfar | Nanomicrobiology |
| P676 | 99 | SYNTHESIS, ANTIBACTERIAL EVALUATION AND SURVEY ON THE THERMOPHYSICAL CHARACTERISTICS OF NOVEL MEDICALLY APPLICABLE POLYAMIDES CONTAINING PHARMACEUTICALLY OUTSTANDING TRIAZOLE MOIETIES | Zahra Moulana | Nanomicrobiology |

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|---|---|---|---|---|
| P677 | 113 | THE ISOLATING ESCHERICHIA COLI SECRETORY OUTER MEMBRANE VESICLES BY USING TANGENTIAL-TRANS FLOW FILTRATION | Babak Beikzadeh | Nanomicrobiology |
| P678 | 122 | COMPARISON OF A GENETICALLY ENGINEERED STRAIN WITH A NATURALLY OCCURRING BACTERIUM IN BIOSYNTHESIS OF PLATINUM NANOPARTICLES | Parisa Eramabadi | Nanomicrobiology |
| P679 | 124 | AN INVESTIGATION OF THE EFFECT OF COPPER NANOPARTICLES ON E.COLI GENOME BY RAPD MOLECULAR MARKERS | Milad Esmatparast | Nanomicrobiology |
| P680 | 141 | DETERMINATION OF MINIMUM INHIBITORY CONCENTRATION AND MINIMUM BACTERICIDAL CONCENTRATION OF COPPER OXIDE AND TITANIUM DIOXIDE NANOPARTICLES ON PSEUDOMONAS AERUGINOSA BACTERIA | Hamed Charkhian | Nanomicrobiology |
| P681 | 150 | MAGNOLIA GRANDIFLORA L. LEAVES EXTRACT MEDIATED GREEN SYNTHESIS OF SILVER NANOPARTICLES AND INVESTIGATION OF ITS ANTIBACTERIAL PROPERTIES | Shahab Ojani | Nanomicrobiology |
| P682 | 151 | SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL ACTIVITY OF SILVER NANOPARTICLES USING MEDICAGO SATIVA LEAVES EXTRACT | Shahab Ojani | Nanomicrobiology |
| P683 | 152 | ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY OF SILVER NANOPARTICLES BIOSYNTHESIZED USING TRIFOLIUM REPENS LEAVES EXTRACT | Shahab Ojani | Nanomicrobiology |

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| P684 | 158 | ANTIBACTERIAL EFFECTS OF CURCUMIN ENCAPSULATED IN MICELLE NANOPARTICLES ON MEXX GENE EXPRESSION IN CIPROFLOXACIN RESISTANT ISOLATES OF PSEUDOMONAS AERUGINOSA IN GUILAN | Saeid Rahbar Takrami | Nanomicrobiology |
| P685 | 198 | STUDY OF ANTIBACTERIAL EFFECT OF SILVER NANOPARTICLES AGAINST GRAM POSITIVE AND GRAM NEGATIVE BACTERIA | Farzaneh Firoozeh | Nanomicrobiology |
| P686 | 213 | AN IN VITRO INVESTIGATION OF THE ANTIBACTERIAL EFFECTS OF SILVER NANOPARTICLES ON STAPHYLOCOCCUS SAPROPHYTICUS | Razieh Mehranpour | Nanomicrobiology |
| P687 | 235 | THE EFFECT OF CURCUMIN ENCAPSULATED IN NANOPARTICLES ON DEATH OF PSEUDOMONAS AERUGINOSA STRAINS AND MEXB GENE EXPRESSION | Ali Rezasoroush | Nanomicrobiology |
| P688 | 242 | EXTRACELLULAR BIOSYNTHESIS OF SILVER NANOPARTICLES BY LACTOBACILLUS PLANTARUM | Behin Omidi | Nanomicrobiology |
| P689 | 267 | SILIBININ ENCAPSULATED IN NANOPARTICLES THERAPY IN PSEUDOMONAS AEROGINOSA | Zahra Ahmadi roudbaraki | Nanomicrobiology |
| P690 | 290 | EFFECT OF PH ON ACTIVITY AND STABILITY OF IMMOBILIZED PHYTASE ON CARBON NANOTUBES | Mohammad pooya Naghshbandi | Nanomicrobiology |
| P691 | 291 | INVESTIGATION OF MEXC GENES EXPRESSION IN CIPROFLUXACIN RESISTANT STRAINS OF PSEUDOMONAS AEROGINOSA TREATED BY CURCUMIN-ENCAPSULATED IN NANOPARTICLES | Bozorgmehr Imani Pirsarae | Nanomicrobiology |
| P692 | 301 | DEVELOPMENT OF A MICROBIAL PHENOL BIOSENSOR BASED ON CARBON NANOTUBE(CNT) | Narjes Kolahchi | Nanomicrobiology |

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| P693 | 378 | ANTIBACTERIAL ACTIVITY OF BIOGENIC TITANIUM DIOXIDE NANOPARTICLES MEDIATED BY VIBRIO VLC UNDER VISIBLE LIGHT SPECTRUM | Mina Masoudi | Nanomicrobiology |
| P694 | 379 | APPLICATION OF LUMINESCENT BACTERIA FOR BIOSYNTHESIS OF TIO2 NANOPARTICLES WITH FLUORESCENT PROPERTY | Mina Masoudi | Nanomicrobiology |
| P695 | 393 | STUDY ON ENZYMATIC ACTIVITY OF CRYSTALLINE COTA PARTICLES EXTRACTED FROM BACILLUS SPHAERICUS SPORES | Afrouzossadat Hosseini Abari | Nanomicrobiology |
| P696 | 442 | EVALUATION OF ANTIFUNGAL EFFECT OF IRON OXIDE NANOPARTICLES SYNTHETIZED CHEMICAL METHOD AGAINST DIFFERENT CANDIDA SPECIES | Samira Salari | Nanomicrobiology |
| P697 | 452 | BIOSYNTHESIS OFSILVER NANOPARTICLES FROM ROMEX ALVEOLATOS AND INVESTIGATION OF THEIR POTENTIAL IMPACT ON ASPERGILUS NIGER | Aniseh Defaei | Nanomicrobiology |
| P698 | 463 | GREEN SYNTHESIS OF SILVER NANOPARTICLES USING ZATARIA MULTIFLORA EXTRACT AND STUDY OF THEIR ANTIFUNGAL EFFECTS AGAINST CANDIDA ALBICANS | Marzieh Jahangiri | Nanomicrobiology |
| P699 | 482 | GREEN MEDIATED SYNTHESIS AND CHARACTERIZATION OF SILVER NANOPARTICLES USING TEUCRIUM POLIUM LEAF EXTRACT AND EVALUATION OF ITS ANTIFUNGAL POTENTIAL | Solmaz Ghojavand | Nanomicrobiology |
| P700 | 493 | COMPARISON OF EFFECT OF DIFFERENT NANOPARTICLES ON PSEUDOMONAS AERUGINOSA OF PRODUCING B-LACTAMASE OF IMP ISOLATED FROM PATIENTS | Mahsa Shahbandeh | Nanomicrobiology |

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| P701 | 500 | CURCUMIN AND ANTIFUNGAL EFFECTS ON CANDIDA ALBICANS WITH DEREGULATION OF MDR1 GENE | Aida Bejari | Nanomicrobiology |
| P702 | 552 | ANTIBACTERIAL ACTIVITY OF SATUREJA KHUZESTANICA ESSENTIAL OIL NANOEMULSIONS | Hasan Rafati | Nanomicrobiology |
| P703 | 561 | THE EFFECT OF SILVER NANOPARTICLES AGAINST CANDIDA SPP. AND THE STUDY OF ITS DAMAGE BY SCANNING ELECTRONIC MICROSCOPY (SEM). | Mahnaz Massoumizade | Nanomicrobiology |
| P704 | 599 | ANTIBACTERIAL AND ANTI-BIOFILM EFFECTS OF ANTIMICROBIAL PHOTODYNAMIC THERAPY USING NANOCHITOSAN-LOADED INDOCYANINE GREEN ON ACINETOBACTER BAUMANNII | Nava Hosseini | Nanomicrobiology |
| P705 | 610 | ISOLATION OF A KLEBSIELLA PNEUMONIAE SPECIFIC LYTIC BACTERIOPHAGE FROM A HOSPITAL WASTE-WATER TREATMENT PLANT | Mahboubeh Soleimani sasani | Nanomicrobiology |
| P706 | 647 | GREEN SYNTHESIS AND ANTIBACTERIAL EFFECT OF SILVER NANOPARTICLES USING SALVIA SAHENDICA | Abdorahim Nouri | Nanomicrobiology |
| P707 | 684 | COMPARISON ANTIMICROBIAL EFFECT OF MULTIWALLED CARBON NANOTUBES AND MULTI – DRUG RESISTANT MDR IMIPENEM ON PSEDOMONAS AERUGINOSA | Hadis Mousavi | Nanomicrobiology |
| P708 | 806 | BIOSYNTHESIS OF SILVER NANOPARTICLES USING ROSA CANINA EXTRACT AND ITS ANTIBACTERIAL ACTIVITY | Fatemeh Safari | Nanomicrobiology |

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| P709 | 851 | STUDY OF ANTIMICROBIAL EFFECTS NANO SYSTEMS BASED (AMIKACIN@MESOPORUS SILICA) AGAINST PSEUDOMONAS AERUGINOSA. | Somayeh Hosseini khomeirani | Nanomicrobiology |
| P710 | 860 | STUDY THE SYNERGISTIC EFFECT OF PROPOLIS AND SILVER NANO PARTICLES INHIBIT THE GROWTH OF BACTERIA ESECHERICHIA COLI ANS STAPHYLOCOCCUS AUREUS | Sahar Teimouri | Nanomicrobiology |
| P711 | 885 | EXTRACELLULAR BIOPRODUCTION OF SILVER NANOPARTICLES BY FUSARIUM SPOROTRICHOSIS | Zahra Beagom Mokhtari Hosseini | Nanomicrobiology |
| P712 | 900 | THE EFFECT OF COPPER AND SILVER NANOPARTICLES ON SALMONELLA TYPHI | Mina Javadi | Nanomicrobiology |
| P713 | 928 | EFFECTS OF NANO SILVER PARTICLES ON METHICILLIN RESISTANCE STAPHYLOCOCCUS AUREUS BEFORE AND AFTER TREATMENT | Morteza H | Nanomicrobiology |
| P714 | 949 | STUDY ON THE ANTIBACTERIAL AND CLEANING PROPERTIES OF SILVER NANOPARTICLE AND ENZYMATIC DETERGENT: CASE STUDY AMYLASE | Fateme Mirzajani | Nanomicrobiology |
| P715 | 950 | INTERACTION OF HIGH DILUTED HOMEOPATHIC DRUGS WITH MODEL BACTERIA | Fateme Mirzajani | Nanomicrobiology |
| P716 | 1002 | SYNERGISTIC EFFECT OF COPPER AND SILVER NANOPARTICLES ON PSEUDOMONAS AERUGINOSA | Niloofar Khodabakhsh Reshad | Nanomicrobiology |
| P717 | 1018 | THE EFFECT OF COPPER AND SILVER NANOPARTICLES ON LISTERIA MONOCYTOGENES | Sadaf Jafari | Nanomicrobiology |
| P718 | 1057 | ANTI-BACTERIAL ACTIVITY OF AMIKACIN LOADED COPPER NANOPARTICLES ON THE ESCHERICHIA COLI. | Pouria Sheikhi | Nanomicrobiology |

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| P719 | 1137 | PREPARATION OF CHITOSAN FUNCTIONALIZED END-CAPPED AG-NPS AND COMPOSITED WITH FE3O4-NPS: ANTIBACTERIAL ACTIVITY AGAINST PSEUDOMONAS AERUGINOSA (PAO-1) | Vahid Pezeshkpour | Nanomicrobiology |
| P720 | 11 | ANTIOXIDANT PROPERTIES OF LACTOBACILLUS SPP. ISOLATED FROM CAMEL DOOGH COLLECTED IN GOLESTAN PROVINCE, IRAN | Zahra Pourramezan | Probiotics and Prebiotics |
| P721 | 20 | ISOLATION AND IDENTIFICATION OF LACTOBACILLUS SP .FROM TRADITIONAL YOGURT (SPAR) IN SHAHR-E BABAK AND ITS ANTAGONIC PROPERTIES ON 5 FOOD BORNE BACTERIA. | REYHANEH TABREZI MOSAFA | Probiotics and Prebiotics |
| P722 | 74 | EFFECTS IMMUNOMODULATION AND ANTICANCER POTENTIALS OF CHEESE PROBIOTICS | Saeideh Ghaffarzadeh | Probiotics and Prebiotics |
| P723 | 125 | INVESTIGATING THE EFFECTS OF LACTOBACILLUS DELBRUECKII ON BLOOD SUGAR AND INSULIN LEVEL IN DIABETIC MICE | Younes Parvin | Probiotics and Prebiotics |
| P724 | 202 | EFFECT OF LACTOBACILLUS DELBRUECKII ON SESTRIN 3 IN NORMAL AND STZ-INDUCED DIABETIC MICE | Reza Dolatyari eslami | Probiotics and Prebiotics |
| P725 | 223 | ANTIMICROBIAL EFFECT OF CASEINATE HYDROLYSATE BY TWO ISOLATES OF LACTIC ACID BACTERIA | Atena Sadat Sombolestani | Probiotics and Prebiotics |
| P726 | 228 | EVALUATION ANTIMICROBIAL EFFECTS OF SUPERNATANT L.FERMENTUM ON ESCHERICHIA COLI BACTERIA WITH AGAR WELL DIFFUSION | MAHSA ZEINALPOOR | Probiotics and Prebiotics |
| P727 | 231 | PROBIOTICS FOR DIABETES PREVENTION IN OBESITY PRONE | Saeed Ahmadimajd | Probiotics and Prebiotics |

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| P728 | 263 | THE EFFECT OF PROBIOTIC LACTOBACILLUS ON SERUM ANTIOXIDANT STATUS IN STREPTOZOTOCIN-INDUCED DIABETIC RATS. | Felor Zargari | Probiotics and Prebiotics |
| P729 | 264 | THE EFFECT OF PROBIOTIC LACTOBACILLUS ON THE SERUM LEVEL OF LIPID PROFILES IN STREPTOZOTOCIN-INDUCED DIABETIC RATS | Felor Zargari | Probiotics and Prebiotics |
| P730 | 309 | LACTOBACILLUS CASEI PROTEOME EXTRACTION: COMPARISON OF DISRUPTION METHODS | Mojtaba Alimolaei | Probiotics and Prebiotics |
| P731 | 383 | ISOLATION AND IDENTIFICATION OF DOMINANT PROBIOTIC BACTERIA ISOLATED FROM YOGURT IN KERMANSHAH PROVINCE. | Minoo Aliabadi | Probiotics and Prebiotics |
| P732 | 417 | HONEY AND SKIN: A REVIEW OF EFFECTS OF HONEY ON SKIN INFECTIONS AND WOUND HEALING IN IRAN'S STUDIES | Mahshid Movahedian Attar | Probiotics and Prebiotics |
| P733 | 422 | THE ROLE OF PROBIOTICS IN THE TREATMENT OF PARASITIC DISEASES: A SYSTEMATIC REVIEW | Pooya Ghasemi Nejad Almani | Probiotics and Prebiotics |
| P734 | 428 | SURVIVAL OF POTENTIAL PROBIOTIC BACTERIA LACTOBACILLUS ACIDOPHILUS IN CONCENTRATED COW'S YOGHURT INCLUDING GHAZVAN (PISTASICA ATLANTICA) | Seyede sima Samimi | Probiotics and Prebiotics |
| P735 | 433 | EFFECTS OF PROBIOTIC INTAKE ON DISABILITY AND MENTAL HEALTH IN SUBJECTS WITH MULTIPLE SCLEROSIS | Omid Reza Tamtaji | Probiotics and Prebiotics |
| P736 | 454 | SENSORY PROPERTIES OF CONCENTRATED COW'S YOGURT INCLUDING POTENTIAL PROBIOTIC BACTERIA LACTOBACILLUS ACIDOPHILUS AND GHAZVAN (MOUNTAIN PISTACHIO) | Seyede sima Samimi | Probiotics and Prebiotics |

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| P737 | 455 | EFFECTS OF PROBIOTIC ON BIOCHEMICAL PARAMETERS IN SUBJECTS WITH MULTIPLE SCLEROSIS | Sanaz Mahdipour | Probiotics and Prebiotics |
| P738 | 462 | EUKARYOTIC MICROORGANISMS AS NEW GENERATION OF PROBIOTICS | Roya Daneshazari | Probiotics and Prebiotics |
| P739 | 470 | EVALUATION OF PROBIOTIC BACTERIA LACTOBACILLUS CASEI SUBSP. CASEI SURVIVABILITY IN CONCENTRATED COW'S YOGHURT INCLUDING GHAZVAN (PISTASICA ATLANTICA) | Bahar Hashemi | Probiotics and Prebiotics |
| P740 | 478 | CHARACTERICTICS OF BIO - YOGURT SUPPLEMENTED BY DIFFERENT CONCENTRATION OF INULIN | Roghieh Ashrafi yourghanloo | Probiotics and Prebiotics |
| P741 | 484 | THE EFFECT OF LACTOBACILLUS BACTERIOCIN ISOLATED FROM JUG AGAINST METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS | Saeedeh Heydarzadeh | Probiotics and Prebiotics |
| P742 | 492 | ISOLATION AND MOLECULAR IDENTIFICATION OF LACTOBACILLUS BULGARICUS FROM LOCALLY DAIRY PRODUCT OF THE LORESTAN PROVINCE | Ali Hasanvand | Probiotics and Prebiotics |
| P743 | 494 | ISOLATION AND MOLECULAR IDENTIFICATION OF ENTEROCOCCUS FAECIUM FROM LOCALLY DAIRY PRODUCT OF THE LORESTAN PROVINCE | Ali Hasanvand | Probiotics and Prebiotics |
| P744 | 497 | ISOLATION AND MOLECULAR IDENTIFICATION OF STREPTOCOCCUS THERMOPHILUS FROM LOCALLY DAIRY PRODUCT OF THE LORESTAN PROVINCE | Ali Hasanvand | Probiotics and Prebiotics |
| P745 | 501 | SURVEY OF CUMIN EXTRACT AND STORAGE CONDITION ON VIABILITY OF PROBIOTIC BACTERIA IN SET YOGHURT | Roghieh Ashrafi yourghanloo | Probiotics and Prebiotics |

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| P746 | 521 | THE PROTECTIVE EFFECTS OF PROBIOTICS IN CANCER THERAPY | Akram sadat Mousavi sani | Probiotics and Prebiotics |
| P747 | 536 | THE EFFECT OF BACILLUS SUBTILIS JQ16816 ON LIPID PANEL PARAMETERS AND MODULATION OF LIPID METABOLISM IN RATS WITH HIGH-FAT DIET | Abolfazl Dehkohneh | Probiotics and Prebiotics |
| P748 | 553 | INVESTIGATING THE EFFECT OF GALACTOOLIGOSACCHARIDE ADDITION AND SUGAR REPLACEMENT WITH HIGH FRUCTOSE CORN SYRUP ON PROBIOTIC APPLE JUICE | Roghieh Ashrafi yourghanloo | Probiotics and Prebiotics |
| P749 | 605 | ANALYSIS OF LACTOBACILLUS ACIDOPHILUS EFFECT ON THE IMPROVEMENT PROCESS OF HELICOBACTERI PYLORI INFECTION WITH INFLAMMATION AND GASTRIC ULCER IN ANIMAL MODEL BALB/C | Behnoush Asgari | Probiotics and Prebiotics |
| P750 | 606 | ANALYSIS OF LACTOBACILLUS PLANTARUM EFFECT ON THE IMPROVEMENT PROCESS OF HELICOBACTERI PYLORI INFECTION WITH INFLAMMATION AND GASTRIC ULCER IN ANIMAL MODEL C57BL/6 | Behnoush Asgari | Probiotics and Prebiotics |
| P751 | 641 | ISOLATION AND IDENTIFICATION OF PROBIOTIC BACTERIA FROM FIG VINEGAR | Sabere Nouri | Probiotics and Prebiotics |
| P752 | 643 | ISOLATION AND IDENTIFICATION OF LACTOBACILLUS PROBIOTIC BACTERIA FROM MORUS ALBA VINEGAR AND THEIR RESISTANCE TO ANTIBIOTICS | Sabere Nouri | Probiotics and Prebiotics |
| P753 | 652 | EFFECTS OF LACTOBACILLUS RHAMNOSUS (LIVE BACTERIA, SUPERNATANT AND CELL LYSIS) ON COLORECTAL TUMOR CELL VIABILITY | Zohreh Norouzi | Probiotics and Prebiotics |

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| P754 | 672 | A STUDY ON THE EFFECTS OF SOY EXTRACT ON THE GROWTH OF PROBIOTIC BACTERIA LACTOBACILLUS ACIDOPHILUS AND BIFIDOBACTERIUM BIFIDUM BACTERIA IN PROBIOTIC MILK AND YOGURT | Bahare Hajirostamlo | Probiotics and Prebiotics |
| P755 | 677 | EVALUATION ANTIMICROBIAL ACTIVITY OF LACTOBACILLUS SPICES AGAINST ACINETOBACTER BAUMANNI | Niki Laalkargar | Probiotics and Prebiotics |
| P756 | 718 | TO STUDY THE EFFECT OF PROBIOTIC(BACILLUS SUBTILIS)ON THE SERUM MDA(MALONDIALDEHYDE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS. | Reihane Ahmadi | Probiotics and Prebiotics |
| P757 | 720 | TO STUDY THE EFFECT OF PROBIOTIC(BACILLUS SUBTILIS)ON THE SERUM TAC(TOTAL_ANTIOXIDANT CAPACITY) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS. | Reihane Ahmadi | Probiotics and Prebiotics |
| P758 | 723 | TO STUDY THE EFFECT OF PROBIOTIC(PROVITA)ON THE SERUM MDA(MALONDIALDEHYDE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS. | Fateme Kazemi meyghani | Probiotics and Prebiotics |
| P759 | 724 | TO STUDY THE EFFECT OF PROBIOTIC(PROVITA)ON THE SERUM TAC(TOTAL_ANTIOXIDANT CAPACITY) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS. | Fateme Kazemi meyghani | Probiotics and Prebiotics |
| P760 | 789 | EXTRACTION AND PURIFICATION OF EXTRACELLULAR VESICLES OF FAECALIBACTERIUM PRAUSNITZII | Nasrin Rabiei | Probiotics and Prebiotics |

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| P761 | 794 | INVESTIGATION OF ACID TOLERANCE PROPERTY OF LACTOBACILLUS ACIDOPHILUS (PTCC 1643) AS A POTENTIAL PROBIOTIC CANDIDATE | Zahra Nouri | Probiotics and Prebiotics |
| P762 | 854 | OPTIMIZATION OF CULTURE CONDITIONS FOR INCREASING THE BIOMASS OF PROBIOTIC STRAIN LACTOBACILLUS ACIDOPHILUS BY EXPERIMENTAL DESIGN | Morteza Mohajeri Amiri | Probiotics and Prebiotics |
| P763 | 874 | INVESTIGATING THE EFFECTS OF FOODS ENRICHED BY PROBIOTICS ON GLUCOSE, LIPID PROFILE AND INFLAMMATORY BIOMARKERS IN DIABETIC PATIENTS (A REVIEW OF HUMAN STUDIES) | Yahya Hesari | Probiotics and Prebiotics |
| P764 | 883 | PROBIOTICS ROLES IN COLON CANCER PREVENTION | Sara Hasanvand | Probiotics and Prebiotics |
| P765 | 917 | ISOLATION OF PROBIOTIC LACTOBACILLUS WITH ANTIMICROBIAL ACTIVITY FROM MILK SAMPLE | Abolfazl Hajialibeighi | Probiotics and Prebiotics |
| P766 | 941 | EFFECT OF PROPHYT (PROBIOTIC BACTERIA AND HERBAL EXTRACTS) ON THE GROWTH OF PATHOGENIC BACTERIA | Naheed Mojgani | Probiotics and Prebiotics |
| P767 | 942 | PHENOTYPIC AND GENOTYPIC CHARACTERISTICS OF PROBIOTIC BACTERIA ISOLATED FROM GASTROINTESTINAL TRACT OF POULTRY | Naheed Mojgani | Probiotics and Prebiotics |
| P768 | 951 | THE STUDY OF EXTRACELLULAR VESICLES DERIVED LACTOBACILLUS CASEI AS NEW GENERATION OF PROBIOTIC CANDIDATE | Maryam Ebrahimi Vargoorani | Probiotics and Prebiotics |
| P769 | 963 | BACTERIOCINS FROM LACTIC ACID BACTERIA: PRODUCTION, PURIFICATION, AND FOOD APPLICATIONS | Alireza Jahani | Probiotics and Prebiotics |

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| P770 | 996 | THE EFFECT OF SACCHAROMYCES CEREVISIAE EXTRACTS OF LOCAL ISOLATE AGAINST ELASTOLYTIC ACTIVITY OF PSEUDOMONAS AERUGINOSA (PAO1) STRAIN. | Zahra Dehghan zadeh | Probiotics and Prebiotics |
| P771 | 997 | THE INHIBITORY EFFECT OF SACCHAROMYCES CEREVISIAE EXTRACTS OF LOCAL ISOLATE AGAINST MOTILITY OF STANDARD STRAIN OF PSEUDOMONAS AERUGINOSA (PAO1) | Zahra Dehghan zadeh | Probiotics and Prebiotics |
| P772 | 1045 | APPLICATION OF PCR-BASED METHODS FOR CHARACTERISATION OF BACTERIOCIN-PRODUCING LAB ISOLATED FROM IRANIAN DAIRY PRODUCTS. | Tannaz Mirhadizadi | Probiotics and Prebiotics |
| P773 | 1058 | STUDY OF PROBIOTICAL EFFECT OF CLINICAL ISOLATES SPORE OF THE BACILLUS GENUS ON CELL LINE HT29/219 | Reza Mahdavi | Probiotics and Prebiotics |
| P774 | 1059 | THE EFFECT OF PROBIOTIC"LACTOBACILLUS PLANTARUM" ON ALCOHOLIC LIVER DISEASE IN RATS | Parisa Tafreshi | Probiotics and Prebiotics |
| P775 | 1060 | THE EFFECT OF PROBIOTIC LEUCONOSTOC MESENTROEDS ON ENZYMES' ACTIVITY IN RATS' INTESTINES | Arezoo Mohammadianfat | Probiotics and Prebiotics |
| P776 | 1061 | PHENOTYPIC AND GENOTYPIC INVESTIGATION OF LACTOBACILLUS SPP. ISOLATED FROM BREAST MILK | Fahimeh Mohammadi | Probiotics and Prebiotics |
| P777 | 1064 | THE EFFECT OF BIFIDOBACTERIUM BIFIDUM ON ALCOHOLIC LIVER DISEASE IN RATS | Sahar Karimi dogheshgi | Probiotics and Prebiotics |
| P778-P888 | | | روز دوم ساعت ۱۴:۰۰-۱۵:۱۵ | |
| P778 | 1070 | OPTIMIZATION OF SONICATION PROTOCOL ON THE WAY OF PROBIOTICS LYSATE PREPARATION | Fatemeh Karami | Probiotics and Prebiotics |

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| P779 | 1073 | PROBIOTICS | Asma Charkhabi | Probiotics and Prebiotics |
| P780 | 1091 | IN-VITRO EVALUATION OF ANTIMICROBIAL ACTIVITY OF 9 PROBIOTIC STRAINS OF BIO-RUMINA NATIVE PROBIOTIC SUPPLEMENT AGAINST GRAM-NEGATIVE PATHOGENS OF CALF STOOL | Moein Safari | Probiotics and Prebiotics |
| P781 | 1094 | THE EFFECT OF PROBIOTIC SACCHAROMYCES CEREVISIAE ON PRODUCTION OF BIOFILM IN PSEUDOMONAS AERUGINOSA (PAO1): | Zahra Ghorbani | Probiotics and Prebiotics |
| P782 | 1095 | THE EFFECT OF PROBIOTIC SACCHAROMYCES CEREVISIAE ON PRODUCTION OF ALGINATE IN PSEUDOMONAS AERUGINOSA (8821M): | Zahra Ghorbani | Probiotics and Prebiotics |
| P783 | 1096 | PROBIOTIC LACTOBACILLI AS A PROPER CANDIDATE TO PREVENT BIOFILM FORMATION BY ENTROCOCCUS FAECALIS | Nazila Arbab Soleimani | Probiotics and Prebiotics |
| P784 | 1105 | IN VITRO EVALUATION OF ANTI-TUMOR EFFECT OF KEFIR SUPERNATANT ON GLIOBLASTOMA CELL LINE U87 | Arqavan Fattahi | Probiotics and Prebiotics |
| P785 | 1110 | ANTIMICROBIAL AND PROTEOLYTICAL PROPERTIES OF LACTIC ACID BACTERIA ISOLATED FROM IRANIAN FERMENTED MILK PRODUCTS | Tannaz Mirhadizadi | Probiotics and Prebiotics |
| P786 | 1114 | A NOVEL YOGURT PRODUCT WITH LACTOBACILLUS ACIDOPHILUS | Nasrin Gholami | Probiotics and Prebiotics |
| P787 | 369 | COMPARATIVE INVESTIGATION EFFECTS OF METHANOLIC FUNNEL VULGAR, MATRICARIA CHAMOMILLA AND ZIZIPHUS SPINA- CHRISTII EXTRACTION ON STAPHYLOCOCCUS AUREUS | Farimah Abbasigoodarzi | Research Ethics |
| P788 | 73 | THE STUDY INFORMATION SOURCES AND KNOWLEDGE OF STUDENTS NON-MEDICAL UNIVERSITIES IN KERMANSHAH PROVINCE, IRAN ABOUT AIDS/HIV | Saeideh Ghaffarzadeh | The Education and Research in Microbial Sciences |

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| P789 | 117 | ANTIMICROBIAL ACTIVITY OF LICOCHALCONE A AGAINST SALMONELLA TYPHIMURIUM ISOLATED FROM POULTRY FLOCKS | Somayyeh Hosseinzadeh | The Education and Research in Microbial Sciences |
| P790 | 118 | ANTIMICROBIAL ACTIVITY OF EPIGALLOCATECHIN-3-GALLATE AGAINST CLINICAL ISOLATES OF SALMONELLA TYPHIMURIUM | Somayyeh Hosseinzadeh | The Education and Research in Microbial Sciences |
| P791 | 126 | CLONING OF INDIGENOUS CHITINASE GENE (CHI C)FROM ENDEMIC STREPTOMYCES GRISEUS SP. USING EXPRESSION VECTOR IN E.COLI SYSTEM | Simin Kheradpajouh | The Education and Research in Microbial Sciences |
| P792 | 127 | ANTIMICROBIAL PROPERTIES OF ORGANIC AND AQUEOUS EXTRACTS OF A MARINE SPONGE SPHECIOSPONGIA VESPARIUM | Ali Taheri | The Education and Research in Microbial Sciences |
| P793 | 135 | DIARRHEAGENIC ESCHERICHIA COLI PATHOTYPES FREQUENCY IN KHUZESTAN | Atieh Mashhadikarimdarbandi | The Education and Research in Microbial Sciences |
| P794 | 138 | ANTIBACTERIAL ACTIVITY OF CELL-FREESUPERNATANT OF LACTOBACILLUS SPECIES AND SILVER NANOPARTICLES AGAINST SALMONELLA TYPHIMURIUM AND LISTERIA MONOCYTOGENES IN VITRO | Aidin Shafipour | The Education and Research in Microbial Sciences |
| P795 | 180 | EVALUATION OF ANTIBACTERIAL ACTIVITY AND BIOFILM DEGRADATION OF MELITTIN ON ACINETOBACTER BAUMANNII ISOLATED FROM BURN INFECTION | Farzaneh Mohaghegh dolatabadi | The Education and Research in Microbial Sciences |
| P796 | 190 | PATHOGEN AGENTS OF BOVINE MASTITIS IN DAIRY COW FARMS IN ISFAHAN CITY | Sara Amiri Fahliyani | The Education and Research in Microbial Sciences |

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| P797 | 271 | EVALUATING THE ABILITY OF BIOFILM FORMATION AND IDENTIFICATION OF EXTENDED SPECTRUM -LACTAMASE (ESBL) GENES FROM ESCHERICHIA COLI ISOLATED FROM CLINICAL SAMPLES IN ZAHEDAN | Sara Jalilian | The Education and Research in Microbial Sciences |
| P798 | 314 | THE LEVEL OF AWARENESS OF MOTHER TO TAKE CARE OF TUBERCULOSIS CHILDREN IN HEALTH INSTITUTIONS IN LARESTAN. | Mohammadreza Foroutani | The Education and Research in Microbial Sciences |
| P799 | 316 | EPIDEMIOLOGICAL POSITION OF LEISHMANIASIS IN SOUTH OF IRAN | Mohammadreza Foroutani | The Education and Research in Microbial Sciences |
| P800 | 362 | THE EFFECT OF HETEROLOGOUS EXPRESSION OF BCSD GENE FROM GLUCONACETOBACTER XYLINUS INTO ESCHERICHIA COLI ON CELLULOSE AMOUNT AND CRYSTALLINITY | Elaheh Sajadi | The Education and Research in Microbial Sciences |
| P801 | 365 | STUDY OF ANTIFUNGAL INFLUENCE LAWSONIA INERMIS L. VOLATILE OIL | Sepideh Sayadi | The Education and Research in Microbial Sciences |
| P802 | 397 | INFLUENCE OF THE BACTERIAL LEADER SEQUENCE ON THE SOLUBILITY OF SCFVS | Maryam Ahmadzadeh | The Education and Research in Microbial Sciences |
| P803 | 406 | APPLICATION OF BACTERIA IN THE DIAGNOSIS AND TREATMENT OF CANCER | Roya Mokhtarian | The Education and Research in Microbial Sciences |
| P804 | 415 | BIOINFORMATICS ANALYSIS OF ENDOLYSIN GENE OF A LACTOCOCCUS GARVIEAE BACTERIOPHAGE | Seyed Mahdi Ghasemi | The Education and Research in Microbial Sciences |
| P805 | 420 | STUDY ON PREVALENCE OF PROTEUS MIRABILIS INFECTION IN DOGS OF URMIA REGION | Shokufeh Akbarinia | The Education and Research in Microbial Sciences |

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| P806 | 424 | PA2070 GENE IN BIOFILM-FORMING CLINICAL PSEUDOMONAS AERUGINOSA ISOLATES | Mina Aghamali | The Education and Research in Microbial Sciences |
| P807 | 483 | STUDY EXTRACELLULAR METABOLITES FROM MICROALGAE AND THEIR BIOTECHNOLOGICAL APPLICATIONS | Ladan Baftehchi | The Education and Research in Microbial Sciences |
| P808 | 508 | EVALUATION OF THE EFFECT MEDICINAL OF A 405-NM DIODE LASER ON ANTIBIOTIC-RESISTANT CLINICAL ENTEROCOCCI ISOLATES (IN VITRO) | Rahimeh Khavari | The Education and Research in Microbial Sciences |
| P809 | 550 | ANTIVIRAL ACTIVITY ASSAY OF CHLOROPHORMIC, METHANOLIC AND ALKALOID FRACTION OF CHELIDONIUM MAJUS AGAINST HERPES SIMPLEX TYPE1 USING PCR | Afsaneh Atashpanjeh | The Education and Research in Microbial Sciences |
| P810 | 572 | ANTAGONISTIC EFFECT OF BACTERIA ISOLATED FROM SOIL IN TEHRAN PROVINCE AGAINST RHIZOPUS ORYZAE GROWTH | Parisa Homayouni Abdali | The Education and Research in Microbial Sciences |
| P811 | 607 | AN ARABIDOPSIS THIONIN-LIKE PEPTIDE WITH ANTIBACTERIAL ACTIVITY | Shir Ahmad Sarani | The Education and Research in Microbial Sciences |
| P812 | 630 | IDENTIFICATION OF NEW BACTERIOPHAGES BY CLONING-SEQUENCING METHOD | Seyed Mahdi Ghasemi | The Education and Research in Microbial Sciences |
| P813 | 646 | DESIGN OF RAPID ASSAY FOR DETECTION OF ANTI-HBC IGM IN SERUM OF INDIVIDUAL INFECTED TO HEPATITIS B VIRUS | Malihe sadat Hashemi khah | The Education and Research in Microbial Sciences |
| P814 | 1500 | MOLECULAR DETECTION OF SHIGELLA SPP. CONTAMINATION IN READY TO EAT SALAD SAMPLES IN WEST OF TEHRAN | Naser Harzandi | The Education and Research in Microbial Sciences |

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| P815 | 658 | EVALUATION OF MUTAGENICITY AND CARCINOGENICITY OF OPIUM USING THE AMES TEST | Kyumars Safinejad | The Education and Research in Microbial Sciences |
| P816 | 660 | COMPARING ANTIBACTERIAL EFFECTS OF GARLIC WITH ANTIBIOTICS BY STAPHYLOCOCCUS AUREUS RESISTANT TO METHICILLIN, STREPTOCOCCUS PNEUMONIAE AND SHIGELLA DYSENTERIAE BACTERIA | Kyumars Safinejad | The Education and Research in Microbial Sciences |
| P817 | 740 | BACTERICIDAL EFFECT OF A 810-NM DIODE LASER ON ANTIBIOTIC-RESISTANT ENTEROCOCCI ISOLATES (IN VITRO) | Rahimeh Khavari | The Education and Research in Microbial Sciences |
| P818 | 751 | A NOVEL EXTREMOPHILIC DYE PEROXIDASE FROM KOCURIA PALUSTRIS: CLONING, EXPRESSION AND PURIFICATION | Maryam Amiri | The Education and Research in Microbial Sciences |
| P819 | 790 | THE EFFECT OF SIGNAL PEPTIDE ON THE AMYLOID FIBRIL FORMATION OF A NOVEL LIPASE FROM PSEUDOMONAS SP. | Nasim Aghaseyedabdollah | The Education and Research in Microbial Sciences |
| P820 | 791 | THE EFFECT OF CLIP-BASED LEARNING ON ACADEMIC ACHIEVEMENT AND SATISFACTION OF HEALTH STUDENTS OF BIRJAND UNIVERSITY OF MEDICAL SCIENCES | Masoud Yousefi | The Education and Research in Microbial Sciences |
| P821 | 808 | ASSESSMENT OF KNOWLEDGE AND PREPAREDNESS IN STUDENTS OF MEDICINE, DENTISTRY, NURSING AND MEDICAL LABORATORY ABOUT BASIC CONCEPTS OF BIOTERRORISM AND MICROBIAL ATTACKS | Majid Zare Bidaki | The Education and Research in Microbial Sciences |
| P822 | 816 | IN VITRO EVALUATION OF ANTIFUNGAL EFFECTS OF SKIN OF ALLIUM CEPA AQUEOUS EXTRACT WITH AGAR WELL DIFFUSION METHOD AGAINST CANDIDA ALBICANS. | Mohammad mahdi Zangeneh | The Education and Research in Microbial Sciences |

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| P823 | 829 | EVALUATION OF ANTIFUNGAL PROPERTIES OF AN ETHNO MEDICINAL PLANT | Mohammad mahdi Zangeneh | The Education and Research in Microbial Sciences |
| P824 | 836 | EXTRACELLULAR AMYLOID FIBRIL AFFECTING STAPHYLOCOCCUS AUREUS BIOFILM FORMATION IN VARIOUS ENVIRONMENTAL FACTORS | Zahra Najarzadeh | The Education and Research in Microbial Sciences |
| P825 | 847 | STUDY AND CRITIQUE OF THE STANDARD OF MICROBIOLOGY IN ISO 11930: 2012 IN COSMETICS | Minoo Motalebi | The Education and Research in Microbial Sciences |
| P826 | 855 | COMPARISON OF PROPOLIS AND FIVE CHEMICAL PRESERVATIVES ANTIBACTERIAL EFFECT AGAINST E. COLI PTCC1338 | Sarvenaz Esmaeilee | The Education and Research in Microbial Sciences |
| P827 | 863 | EFFECT OF POLARIZED MESENCHYMAL STEM CELL CONDITIONED MEDIUM ON 4T1 CELL LINE | Nasrin Noorolahzadeh | The Education and Research in Microbial Sciences |
| P828 | 870 | ACTIVATED RAW 264.7 CELLS PROFILES IN RESPONSE TO TREATMENT WITH MELATONIN | Masumeh Ahanjan | The Education and Research in Microbial Sciences |
| P829 | 904 | EVALUATION OF LACTOBACILLUS GROWTH RATE AT DIFFERENT CONCENTRATIONS OF BILE IN MRS CULTURE ENVIRONMENT | Zahra Ebrahimi | The Education and Research in Microbial Sciences |
| P830 | 908 | IN-VITRO SCREENING OF ANTHEMIS ALTISSIMA HYDRO-ALCOHOLIC EXTRACT ON TRICHOMONAS VAGINALIS | Narges Sotoodeh | The Education and Research in Microbial Sciences |
| P831 | 916 | IMPROVEMENT OF CHLORHEXIDINE FUNCTION AS AN ANTISEPTIC AGENT USING NIGELLA SATIVA AS A NATURAL ADDITIVE SUBSTANCE | Mozhdeh Mehrparvar | The Education and Research in Microbial Sciences |

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| P832 | 955 | FREQUENCY OF VARIOUS CANDIDA SPECIES ISOLATED FROM VAGINAL SAMPLES AND COMPARISON OF BIOCHEMICAL AND MOLECULAR RESULTS | Fatemeh Ashori | The Education and Research in Microbial Sciences |
| P833 | 977 | THE STATISTICAL ANALYSIS OF RELATIONSHIP BETWEEN THE ABUNDANCE OF PHYLOGENETIC GROUPS AND SOME PHENOTYPIC VIRULENCE FACTORS OF UROPHATOGENIC ESCHERICHIA COLI (UPEC) | Mahsa Mirzarazi Dehaghi | The Education and Research in Microbial Sciences |
| P834 | 1052 | POLYMORPHISM ANALYSIS OF THE OMEGA- CLASS GLUTATHION S TRANSFERASE IN PATIENTS WITH CERVICAL CANCER | Sara Zamani | The Education and Research in Microbial Sciences |
| P835 | 1139 | ISOLATION OF GENES AT THE MOLECULAR EXOS, LASB, TOXA, ALGD PSEUDOMONAS AERUGINOSA ISOLATES FROM HUMAN BY MULTIPLEX PCR | Ali Mokhtari | The Education and Research in Microbial Sciences |
| P836 | 1153 | A COMPARATIVE STUDY ON ANTIOXIDANT POTENTIALITY OF CULTIVATED AND WILD STRAINS OF BUTTON MUSHROOMS, AGARICUS SPP. | Sharareh Rezaeian | The Education and Research in Microbial Sciences |
| P837 | 1161 | UROGENITAL INFECTIONS AND HUMAN INFERTILITY: AN OVERVIEW | Nima Shaykh Baygloo | The Education and Research in Microbial Sciences |
| P838 | 12 | PREVALENCE OF FIM H GENE IN UROPATHOGENIC E. COLI PRODUCING AND NON PRODUCING BIOFILM ISOLATED FROM DIABETIC PATIENTS IN SHAHREKORD, IRAN. | Elahe Tajbakhsh | The Emerging Infectious Diseases |
| P839 | 13 | PREVALENCE OF O SEROGROUP IN UROPATHOGENIC E. COLI ISOLATED FROM DIABETIC PATIENTS IN SHAHREKORD | Elahe Tajbakhsh | The Emerging Infectious Diseases |

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| P840 | 24 | INVESTIGATION OF POLYMORPHISM AND MUTATION IN THE EXON1 REGION OF MBL2 GENE AT PATIENTS WITH COPD | Negar Aliyari | The Emerging Infectious Diseases |
| P841 | 57 | PULMONARY MYCOBACTERIUM SIMIAE INFECTION IN AN IRANIAN REGIONAL CENTERS FOR TUBERCULOSIS | Mohammad javad Nasiri | The Emerging Infectious Diseases |
| P842 | 101 | INVESTIGATING EFFECTIVENESS OF CAMELLIA SINENSIS AQUEOUS EXTRACT ON ACANTHAMOEBA CYSTS | Zahra Eslamirad | The Emerging Infectious Diseases |
| P843 | 119 | SURVEY OF HUMAN PAPILLOMAVIRUS INFECTION RATE IN PATIENTS WITH ESOPHAGEAL CANCER IN IRAN: A SYSTEMATIC REVIEW AND META-ANALYSIS | Bashir Mohamad pour | The Emerging Infectious Diseases |
| P844 | 216 | EPIDEMIOLOGY OF LEPROSY IN NORTH OF IRAN DURING 15 YEARS | Mahdis Ghavidel | The Emerging Infectious Diseases |
| P845 | 258 | PREVALENCE OF CRYPTOSPORIDIUM PARVUM INFECTION AMONG 1-10 YEAR-OLD CHILDREN IN ARDABIL, IRAN | Mohammad Taghi Ahady | The Emerging Infectious Diseases |
| P846 | 328 | ANALYSIS OF IL-6 GENE POLYMORPHISMS IN PATIENTS WITH BRUCELLOSIS: A CASE CONTROL STUDY | Sima Kazemi | The Emerging Infectious Diseases |
| P847 | 407 | ANTIFUNGAL ALKALOIDS FROM THE AERIAL PARTS OF GLAUCIUM CORNICULATUM AGAINST CANDIDA ALBICANS | Mohsen Bagheri | The Emerging Infectious Diseases |
| P848 | 418 | NOCARDIA CYRIACIGEORGICA ISOLATION AND DIAGNOSIS IN PATIENT WITH BRAIN ABSCESS | Mehdi Khorshidi | The Emerging Infectious Diseases |
| P849 | 449 | PREVALENCE OF ONYCHOMYCOSIS DUE TO NON-DERMATOPHYTE MOLDS IN TEHRAN | Marjane Babayani | The Emerging Infectious Diseases |

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| P850 | 453 | PREVALENCE OF ONYCHOMYCOSIS DUE TO DERMATOPHYTE AGENTS AMONG PATIENTS REFERRED TO MYCOLOGY LABORATORY OF SCHOOL OF PUBLIC HEALTH, TEHRAN UNIVERSITY OF MEDICAL SCIENCE | Marjane Babayani | The Emerging Infectious Diseases |
| P851 | 477 | OROPHARYNGEAL COLONIZATION OF HIV-INFECTED DUE TO NON – ALBICANS CANDIDA (NAC) SPP. IN KERMAN, IRAN | Abbas Hosain pour | The Emerging Infectious Diseases |
| P852 | 496 | PREVALENCE OF CANDIDA ALBICANS IN HIV /AIDS PATIENTS AND HIV-FREE SUBJECTS IN KERMAN, IRAN | Abbas Hosain pour | The Emerging Infectious Diseases |
| P853 | 499 | HIGH PREVALENCE OF CANDIDA KRUSEI IN HIV-FREE SUBJECTS | Samira Salari | The Emerging Infectious Diseases |
| P854 | 545 | ISOLATION AND IDENTIFICATION OF NOCARDIA CYRIACIGEORGICA FROM BRAIN ABSCESS | Sepehr Navid | The Emerging Infectious Diseases |
| P855 | 587 | STUDY OF BACTERIAL STRAINS WERE ISOLATED IN PATIENTS WITH DIABETIC PATIENTS | Sara Kamalzadeh | The Emerging Infectious Diseases |
| P856 | 957 | INHIBITORY EFFECT OF AQUEOUS EXTRACT OF THREE PLANT SPECIES OF IRAN ON HSV-1 MULTIPLICATION | Maliheh Farahani | The Emerging Infectious Diseases |
| P857 | 961 | EVALUATION OF IGM, IGG ANTIBODIES RATE AGAINST CYTOMEGAL AND RUBELLA VIRUSES AND TOXOPLASMA PARASITE IN PREGNANT WOMEN REFERRED TO HEALTH CENTERS IN YASOUJ BY SEROLOGICAL AND PCR METHODS | Asghar Sharifi | The Emerging Infectious Diseases |
| P858 | 980 | GENOMIC SEQUENCING OF A STRAIN OF ACINETOBACTER BAUMANNII FOCUS ON METALLO-B-LACTAMASE (MBL) ENZYME | Mohammad Ahanjan | The Emerging Infectious Diseases |

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| P859 | 1024 | THE FREQUENCY OF ENTEROTOXIGENIC STRAINS OF PSEUDOMONAS AERUGINOSA IN GASTEROINTESTINAL INFECTIONS | Parisa Fakhari | The Emerging Infectious Diseases |
| P860 | 1051 | CHRONIC INFLAMMATION OF THE TIBIOTALAR JOINT WITH A LATERAL MALLEOLAR FISTULA: A RARE PRESENTATION OF TUBERCULOSIS | Fatemeh Abbasi | The Emerging Infectious Diseases |
| P861 | 31 | INVESTIGATION OF POLYMORPHISM IN PROMOTER REGION OF FICOLIN-2 GENE (FCN2) IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) | Hediyeh Behnam | The Mechanisms of Pathogenicity in Infectious Diseases |
| P862 | 81 | IN VITRO ASSESSMENT OF THE PROTOSCOLICIDAL ACTIVITIES OF THE EPHEDRA MAJOR METHANOL EXTRACTS | Sepideh Salehi | The Mechanisms of Pathogenicity in Infectious Diseases |
| P863 | 86 | A REVIEW ON CARCINOGENIC MECHANISMS OF ONCOGENIC VIRUSES | Ramin Hosseinzadeh | The Mechanisms of Pathogenicity in Infectious Diseases |
| P864 | 116 | EVALUATION OF THE BIOFILM FORMING ABILITY IN SALMONELLA ENTERICA SEROVAR TYPHIMURIUM ISOLATES FROM POULTRY FLOCKS | Somayyeh Hosseinzadeh | The Mechanisms of Pathogenicity in Infectious Diseases |
| P865 | 262 | MODELING THE POPULATION DYNAMICS OF ACQUIRED IMMUNITY TO PARASITE INFECTION | Ashkan Dehghan | The Mechanisms of Pathogenicity in Infectious Diseases |
| P866 | 340 | THE STUDY OF PROTEINASE ACTIVITY OF CANDIDA ALBICANS ISOLATED FROM SYSTEMIC CANDIDIASIS | Zahra Jahanshiri | The Mechanisms of Pathogenicity in Infectious Diseases |

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| P867 | 358 | IL-8 AND IL-6 PRODUCTION BY MONONUCLEAR CELLS STIMULATED WITH P.AERUGINOSA EXTRACT IN DIFFERENT LEWIS BLOOD GROUPS | Samaneh Alinezhad monfared | The Mechanisms of Pathogenicity in Infectious Diseases |
| P868 | 438 | ANTI-BIOFILM EFFECT OF FLUCONAZOLE ON BIOFILM FORMATION BY CANDIDA SPECIES | Samira Salari | The Mechanisms of Pathogenicity in Infectious Diseases |
| P869 | 443 | EVALUATION OF BIOFILM FORMATION IN CLINICAL CANDIDA ISOLATES | Samira Salari | The Mechanisms of Pathogenicity in Infectious Diseases |
| P870 | 444 | SUSCEPTIBILITY CHARACTERIZATION OF CANDIDA SPP. TO FLUCONAZOLE | Samira Salari | The Mechanisms of Pathogenicity in Infectious Diseases |
| P871 | 456 | CO2 LASER VERSUS HALITA AGAINST ORAL PATHOGENS | Hossein Samadi Kafil | The Mechanisms of Pathogenicity in Infectious Diseases |
| P872 | 471 | The role of some enviromental factors on hemolysin gene expresions in some Serratiae marcescens local isolation | Marrib Rasheed | The Mechanisms of Pathogenicity in Infectious Diseases |
| P873 | 554 | CLONING AND EXPRESSION OF CELLULAR-RELATED EPITOPES OF URINARY TRACT INFECTIONS INTO PBAD VECTOR | Jamil Kheirvari Khezerloo | The Mechanisms of Pathogenicity in Infectious Diseases |
| P874 | 588 | COMPARE THE RELATIONSHIP BETWEEN FUNGI AND AGE IN TISSUE OF PATIENTS WITH FUNGAL INFECTION | Sara Kamalzadeh | The Mechanisms of Pathogenicity in Infectious Diseases |
| P875 | 665 | CLONING AND EXPRESSION OF HUMORAL-RELATED EPITOPES OF URINARY TRACT INFECTIONS INTO PBAD VECTOR | Zohreh Haghri | The Mechanisms of Pathogenicity in Infectious Diseases |

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| P876 | 758 | CAPABILITY OF CIPROFLOXACIN, PENICILLIN AND TELITHROMYCIN IN THE LUNG ABSCESS TREATMENT AND CORRELATION BETWEEN TOOTH INFECTION AND LUNG ABSCESS | Sayed alireza Mirsane | The Mechanisms of Pathogenicity in Infectious Diseases |
| P877 | 773 | MULTIPLE SEQUENCE ALIGNMENT OF FLIC IN ESCHERICHIA COLI | Mansoureh Shahbazi Dastjerdeh | The Mechanisms of Pathogenicity in Infectious Diseases |
| P878 | 909 | VIRULENCE FACTORS IN CLINICAL PROTEUS SPP. ISOLATED FROM URINARY TRACT INFECTIONS IN NAJAF, CENTRAL IRAQ | Makki A-Muslim-A-Alzahra | The Mechanisms of Pathogenicity in Infectious Diseases |
| P879 | 910 | DETECTION OF SOME VIRULENCE ENCODING GENES IN PROTEUS MIRABILIS AND PROTEUS PENNERI ISOLATED FROM URINARY TRACT INFECTIONS | Makki A-Muslim-A-Alzahra | The Mechanisms of Pathogenicity in Infectious Diseases |
| P880 | 936 | COMPUTATIONAL MODELLING OF ACIDIC RESISTANCE SYSTEM INHIBITION OF HELICOBACTER PYLORI BY CHEMICAL COMPOUNDS OF ACHILLEA MILLEFOLIUM EXTRACTS | Zahra Asadollahi | The Mechanisms of Pathogenicity in Infectious Diseases |
| P881 | 972 | INVESTIGATION OF SERUM LEVEL FICOLIN-2 PROTEIN IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) | Azam Amu | The Mechanisms of Pathogenicity in Infectious Diseases |
| P882 | 992 | INVESTIGATING THE ROLE OF EPSTEIN-BARR VIRUS IN THE INCIDENCE OF GASTRIC CANCER AND BREAST CANCER BASED ON THE EBNA-1 | Esmaeil Ghorbanalinezhad | The Mechanisms of Pathogenicity in Infectious Diseases |
| P883 | 1013 | PRO-INFLAMMATORY GENE EXPRESSION IN LEISHMANIA SELF-LIMITING WOUNDS IN BALB/C MICE | Sahar Hamounnavard | The Mechanisms of Pathogenicity in Infectious Diseases |

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| P884 | 1014 | CHARACTERIZATION OF VIRULENCE MARKERS IN PSEUDOMONAS AERUGINOSA STRAINS ISOLATES FROM HOSPITALIZED PATIENTS | Jalal Mardaneh | The Mechanisms of Pathogenicity in Infectious Diseases |
| P885 | 1015 | EVALUATION OF EXPRESSION OF TNF-A, IL1-A, IL1-B PRO-INFLAMMATORY GENES IN LIVER LEISHMANIA INFECTED BALB/C MICE | Sahar Hamounnavard | The Mechanisms of Pathogenicity in Infectious Diseases |
| P886 | 1017 | INVESTIGATION OF THE EXPRESSION OF PROINFLAMMATORY GENES IN THE SPLEEN AND SKIN EXPERIMENTAL MODELS OF BALB/C MICE | Sahar Hamounnavard | The Mechanisms of Pathogenicity in Infectious Diseases |
| P887 | 1025 | AN INVESTIGATION ON THE STRUCTURE AND FUNCTION OF ANTICANCER TOXIN IN PSEUDOMONAS AERUGINOSA FOR DEVELOPMENT A NEW GENERATION OF IMMUNOTOXINS | Zohreh Neyestani | The Mechanisms of Pathogenicity in Infectious Diseases |
| P888 | 1043 | ASSESSMENT THE CORRELATION BETWEEN THE PREVALENCE OF THE GENES ENCODING IRON UPTAKE RECEPTORS WITH BIOFILM FORMATION IN UROPATHOGENIC ESCHERICHIA COLI ISOLATED FROM URINARY TRACT INFECTIONS | Mehri Habibi | The Mechanisms of Pathogenicity in Infectious Diseases |
| P889-P999 | | | روز سوم ساعت ۸:۳۰-۹:۴۵ | |
| P889 | 1098 | DETERMINATION OF PHYLOGENETIC GROUPS OF E. COLI ISOLATED FROM INFECTION COLIBACILLOSIS POULTRY | Davood Tarbiyzr nazlo | The Mechanisms of Pathogenicity in Infectious Diseases |
| P890 | 1151 | STREPTOCOCCUS MUTANS ARE THE MAJOR CAUSE OF DENTAL CARIES | Mohamadmehdi Shakourimahmodabadi | The Mechanisms of Pathogenicity in Infectious Diseases |

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| P891 | 22 | EVALUATION OF MICROBIAL FLORA ON THE HANDS OF HEALTH CARE WORKERS IN ARYA HOSPITAL OF MASHHAD ON 2013 | Hossein Mokhtari | The Nosocomial Infections |
| P892 | 64 | EFFECT OF PLANT EXTRACTS, MIND AND BASIL ON CLINICAL SAMPLES AND THE STANDARD BACTERIA E.COLI USING DISK DIFFUSION AGAR IN HAMEDAN CITY | Amirhossein Momen | The Nosocomial Infections |
| P893 | 112 | THE PREVALENCE OF BACTERIA ON MOBILE PHONES OF STUDENTS IN TEACHING HOSPITALS OF ARAK UNIVERSITY OF MEDICAL SCIENCES | Mahdi Ahmadi Daghestani | The Nosocomial Infections |
| P894 | 140 | NOSOCOMIAL INFECTIONS IN THE INTENSIVE CARE UNIT: INCIDENCE, RISK FACTORS, OUTCOME AND ASSOCIATED PATHOGENS IN A PUBLIC TERTIARY TEACHING HOSPITAL OF ESFAHAN UNIVERSITY OF MEDICAL SCINCE | Seyed ehsan Asadi | The Nosocomial Infections |
| P895 | 230 | MICROBIOLOGICAL CONTAMINATION OF HOSPITAL TEXTILE, EFFECTIVENESS OF NEW LAUNDRY DETERGENT | Mandana Lak | The Nosocomial Infections |
| P896 | 310 | THE ABILITY OF BIOFILM FORMATION IN PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM SKIN INFECTIONS | Ali Rahmati | The Nosocomial Infections |
| P897 | 335 | OPTIMIZING CONDITIONS FOR EXTRACTION OF DRACOCEPHALUM KOTSCHYI AND STUDY THE ANTIFUNGAL EFFECTS AGAINST CANDIDA ALBICANS | Neda Ghoratolhamideh | The Nosocomial Infections |
| P898 | 403 | A COMPARISON OF POSITIVE-CULTURES OF NOSOCOMIAL INFECTIONS IN INTERNAL AND SURGERY ICUS | Majid Zare Bidaki | The Nosocomial Infections |

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| P899 | 439 | EVALUATION OF ANTI FUNGAL ACTIVITY OF EUCALYPTUS CAMALDULENSIS ESSENTIAL OIL ON CANDIDA ALBICANS AND CANDIDA GLABRATA AND SACCHAROMYCES CEREVISIAE IN VITRO | Saba Davoodabadi farahani | The Nosocomial Infections |
| P900 | 480 | THE PREVALENCE OF PANTON VALENTINE LEUKOCIDIN POSITIVE IN METICILLIN RESISTANCE S. AUREUS ISOLATED FROM SKIN AND SOFT TISSUE INFECTION | Zeinab Faghee | The Nosocomial Infections |
| P901 | 584 | COMPARISON OF THE PREVALENCE OF ENTEROVIRUSES IN BLOOD SAMPLES OF PATIENTS WITH AND WITHOUT UNSTABLE ANGINA | Akram Baghani | The Nosocomial Infections |
| P902 | 628 | AN INVESTIGATION OF DRUG SUSCEPTIBILITY OF ISOLATED ASPERGILLUS SPECIES TO ANTIFUNGAL DRUGS IN THE ICU OF HOSPITALS IN INVITRO | Ayatollah Nasrollahi omran | The Nosocomial Infections |
| P903 | 696 | INVESTIGATION OF THE FREQUENCY OF ENTEROTOXIGENIC STAPHYLOCOCCUS AUREUS INFECTION AMONG OUTPATIENTS AND INPATIENTS WITH GASTROENTERITIS IN TEHRAN | Elham Khodamorady | The Nosocomial Infections |
| P904 | 783 | A REVIEW OF NEW VACCINES AGAINST NOSOCOMIAL CLOSTRIDIUM DIFFICILE INFECTIONS | Parham Abedini | The Nosocomial Infections |
| P905 | 853 | ANTIBIOTIC RESISTANCE PHENOTYPES, ESTA GENE PRESENCE AND BIOFILM FORMATION AMONG PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM BURN PATIENTS | Parisa Roshani Asl | The Nosocomial Infections |

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| P906 | 875 | DETECTION OF LASB GENE, BIOFILM FORMATION AND ANTIBIOTIC RESISTANCE PATTERNS IN BURN ISOLATES OF PSEUDOMONAS AERUGINOSA | Parisa Roshani Asl | The Nosocomial Infections |
| P907 | 984 | DETECTION OF THE COMMON BACTERIAL PATHOGENS AMONG PATIANTS SUFFERING FROM EMPYEMA USING PCR AND BACTERIAL CULTURE IN AHVAZ CITY | Samaneh Yousefpour | The Nosocomial Infections |
| P908 | 1001 | FREQUENCY OF ADHESIN AND BIOFILM GENES IN STAPHYLOCOCCUS AUREUS ISOLATES FROM PATIENTS, PERSONNEL AND SURFACES IN BURN SHAHID MOTAHARI HOSPITAL | Davood Darban Sarokhalil | The Nosocomial Infections |
| P909 | 1012 | DETECTION OF TOXIGENIC CLOSTRIDIUM DIFFICILE IN CHILDREN | Jalal Mardaneh | The Nosocomial Infections |
| P910 | 1142 | POSTCESAREAN WOUND INFECTION: PREVALENCE, IMPACT, PREVENTION, AND MANAGEMENT | Saideh Asadi | The Nosocomial Infections |
| P911 | 7 | STUDY OF CUTANEOUS LEISHMANIASIS (CL) IN A FOCUS OF SOUTHERN IRAN | Hamid Kassiri | Zoonoses and veterinary Microbiology |
| P912 | 8 | DEFINITE VECTORS AND RESERVOIRS OF CUTANEOUS LEISHMANIASIS IN SOUTHEASTERN IRAN | Hamid Kassiri | Zoonoses and veterinary Microbiology |
| P913 | 25 | THE PREVALENCE OF SERUM ANTIBODIES AGAINST HEPATITIS E IN PET OWNERS IN BUSHEHR | Zeynab Gharadaghi | Zoonoses and veterinary Microbiology |
| P914 | 26 | THE PREVALENCE OF SERUM ANTIBODIES AGAINST HEPATITIS E IN EMPLOYED FISHERMEN ON PERSIAN GULF FISHING VESSELS | Shaghayegh Rostami yasuj | Zoonoses and veterinary Microbiology |
| P915 | 36 | INVESTIGATION OF DIROFILARIA IMMITIS INFECTION IN STRAY DOGS OF KERMANSHAH | Ghazaaleh Adhami | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P916 | 38 | SAFETY IN HUNT RHINO | Farzaneh saboohi Saboohi | Zoonoses and veterinary Microbiology |
| P917 | 42 | COMPARISON THREE DIFFERENT METHODS FOR RNA EXTRACTION FROM INACTIVE AVIAN INFECTIOUS BRONCHITIS (IBV) VACCINE USING REAL TIME RT-PCR | Arash Ghalyanchilangeroudi | Zoonoses and veterinary Microbiology |
| P918 | 43 | DETETCTION OF AVIAN META PNEUMOVIRUS SUBTYPES B COMMON BLACKBIRD (TURDUS MERULA) : THE FIRST REPORT IN THE WORLD | Arash Ghalyanchilangeroudi | Zoonoses and veterinary Microbiology |
| P919 | 50 | THE PREVALENCE STUDY OF ANIMAL BITE IN THE WESTERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010-2015 | Narges Babevey | Zoonoses and veterinary Microbiology |
| P920 | 59 | A REPORT OF EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN THE NORTHERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN | Mojtaba Moradi | Zoonoses and veterinary Microbiology |
| P921 | 62 | A REPORT PREVALENCE CUTANEOUS LEISHMANIASIS IN THE KERMANSHAH PROVINCE , WEST OF IRAN, DURING 2010-2015 | Mohammad Momeni | Zoonoses and veterinary Microbiology |
| P922 | 65 | A SURVAY EPIDEMIOLGICAL CUTANEOUS LEISHMANIASIS IN THE KERMANSHAH CITY OF WEST IRAN, DURING 2010-2015 | Mehrdad Pooyanmehr | Zoonoses and veterinary Microbiology |
| P923 | 66 | SURVEY EPIDEMIOLOGICAL OF ANTHRAX IN KERMANSHAH CITY , WEST IRAN DURING 2010- 2015 | Mehrdad Pooyanmehr | Zoonoses and veterinary Microbiology |
| P924 | 67 | SURVEY EPIDEMIOLOGICAL OF BRUCELLOSIS IN KERMANSHAH CITY,WEST IRAN | Mehrdad Pooyanmehr | Zoonoses and veterinary Microbiology |
| P925 | 68 | SURVEY EPIDEMIOLOGICAL OF HYDATID CYSTS IN KERMANSHAH CITY, WEST IRAN | Mehrdad Pooyanmehr | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P926 | 71 | STUDY OF PREVALENCE CUTANEOUS LEISHMANIASIS IN THE NORTHERN AREAS OF KERMANSHAH PROVINCE ,WEST IRAN DURING 2010-2015 | Saeideh Ghaffarzadeh | Zoonoses and veterinary Microbiology |
| P927 | 75 | SURVEY EPIDEMIOLOGICAL OF HYDATID CYSTS IN KERMANSHAH PROVINCE , WEST IRAN | Mohammad Momeni | Zoonoses and veterinary Microbiology |
| P928 | 79 | COMPARISON OF SEVERAL DIAGNOSTIC METHODS FOR DETECTING BOVINE VIRAL DIARRHEA VIRUS INFECTION IN CATTLE | Elham Romiani | Zoonoses and veterinary Microbiology |
| P929 | 91 | A REPORT PREVALENCE ANTHRAX IN THE NORTHERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015 | Mojtaba Moradi | Zoonoses and veterinary Microbiology |
| P930 | 123 | A REPORT PREVALENCE CUTANEOUS LEISHMANIASIS IN THE KERMANSHAH PROVINCE,WEST OF IRAN, DURING 2010- 2015 | Milad Akbarzade | Zoonoses and veterinary Microbiology |
| P931 | 129 | A REPORT OF SEROPREVALENCE BRUCELLOSIS IN SOUTH WEST CITIES AREAS OF KERMANSHAH PROVINCE, DURING 2010- 2015 | Milad Akbarzade | Zoonoses and veterinary Microbiology |
| P932 | 130 | A REPORT PREVALENCE ANTHRAX IN SOUTH WEST CITIES AREAS OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010-2015 | Milad Akbarzade | Zoonoses and veterinary Microbiology |
| P933 | 131 | SURVEY EPIDEMIOLOGICAL OF ANTHRAX IN KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015 | Mohammad Momeni | Zoonoses and veterinary Microbiology |
| P934 | 132 | SURVEY EPIDEMIOLOGICAL OF BRUCELLOSIS IN PROVINCE KERMANSHAH , WEST OF IRAN | Mohammad Momeni | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P935 | 133 | SURVEY OF SEROPREVALENCE OF BOVINE VIRAL DIARRHEA (BVD) IN WEST REGION OF KERMANSHAH PROVINCE USING ELISA METHOD | Amir Lorestani | Zoonoses and veterinary Microbiology |
| P936 | 139 | ANTIBIOTIC RESISTANCE PATTERN OF SALMONELLA SPP. AND ESCHERICHIA COLI SEROVARS ISOLATED FROM SHELLFISHES IN WEST-AZERBAIJAN PROVENANCE | Aidin Shafipour | Zoonoses and veterinary Microbiology |
| P937 | 148 | PHYLOGENETIC GROUP DETERMINATION OF ESCHERICHIA COLI ISOLATED FROM BROILERS WITH COLIBACILLOSIS IN POULTRY FARMS OF ILAM CITY, IRAN | Khatoun Shakarami | Zoonoses and veterinary Microbiology |
| P938 | 167 | REVIEW ANTIBACTERIAL EFFECTS OF METHANOL EXTRACTS OF PLANT DRUGS, EUCALYPTUS GLOBULUS AND QUERCUS CASTANEIFOLIA ON BACTERIUM LACTOCOCCUS GARVIEAE IN INVITRO CONDITION. | Maryam Hafizi barjin | Zoonoses and veterinary Microbiology |
| P939 | 168 | COMPARISON BETWEEN ANTIFUNGAL EFFECT OF ETHANOLIC EXTRAC OF CINNAMOMUM ZEYLANICUM L. , BERBERIS VULGARIS L, MYRTUS COMMONIS L AND GARLIC WITH CANDIDA ALBICANS AND MALASEZIA FURFUR | Maryam Hafizi barjin | Zoonoses and veterinary Microbiology |
| P940 | 172 | THE PREVALENCE OF SARCOCYSTIS SPP. MICROCYSTS IN ESOPHAGUS TISSUE OF SHEEP REFERRED TO SEMNAN ABATTOIR | Maryam Rassouli | Zoonoses and veterinary Microbiology |
| P941 | 212 | THE CONTRAINDICATED OF LIME IN AGRICULTURAL ANTHRAX DISINFECTION PROCEDURES: THE POTENTIAL ROLE OF CALCIUM IN THE PRESERVATION OF ANTHRAX SPORES | Elham Ahmadi | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P942 | 241 | IDENTIFICATION OF FASCIOLA SPECIES BY PCR-RFLP ASSAY IN AZADSHAHER(GOLESTAN PROVINCE) | Ahmad Halakou | Zoonoses and veterinary Microbiology |
| P943 | 303 | PREVALENCE OF LIVER FLUKE INFECTIONS IN SLAUGHTERED ANIMALS IN PIRANSHAHR CITY, IRAN | Naser Nazari | Zoonoses and veterinary Microbiology |
| P944 | 307 | IDENTIFICATION AND SURVEY OF GRAM-NEGATIVE INTESTINE BACTERIA IN POULTRY EGG-LAYING IN BAGHMALECK AREA | Fariba Kavosh | Zoonoses and veterinary Microbiology |
| P945 | 319 | A SERO-EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN DAIRY CATTLE FARMS OF KURDISTAN PROVINCE | Javad Beheshtipour | Zoonoses and veterinary Microbiology |
| P946 | 355 | MOLECULAR ANALYSIS OF GENE ENCODING SURFACE PROTEIN OMPL37 IN PATHOGENIC AND NON-PATHOGENIC LEPTOSPIRA ISOLATION | Elaheh Rezaei | Zoonoses and veterinary Microbiology |
| P947 | 356 | TYPING CLOSTRIDIUM PERFRINGENS IN IRAN, SYSTEMATIC REVIEWS STUDY | Mehrdad Shamsaddini Bafti | Zoonoses and veterinary Microbiology |
| P948 | 384 | شناسایی و تشخیص سالمونلاهای جدا شده از گاوداری های شیری اطراف استان تهران و البرز با استفاده از روش های کلاسیک و مولکولی | Hadi Ghafari | Zoonoses and veterinary Microbiology |
| P949 | 388 | TREND OF VACCINATED DOG NUMBERS FOR RABIES IN IRAN DURING 2005 TO 2015 | Mohammad hasan Rabiee | Zoonoses and veterinary Microbiology |
| P950 | 389 | INCIDENCE AND MORTALITY RATE OF INFECTIOUS BURSAL DISEASE IN BROILER POULTRY FARMS OF IRAN DURING 2005 TO 2015 | Mohammad hasan Rabiee | Zoonoses and veterinary Microbiology |
| P951 | 390 | TRENDS OF TESTED EQUINE FOR GLANDERS INFECTION IN IRAN DURING 2005 TO 2015 | Mohammad hasan Rabiee | Zoonoses and veterinary Microbiology |
| P952 | 425 | DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS ISOLATED FROM BOVINE MASTITIS IN SANANDAJ AREA | Javad Beheshtipour | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P953 | 429 | IDENTIFICATION OF PATHOGENIC LEPTOSPIRES BASED ON LIPL32 GENE | Fatemeh Rahimi zarchi | Zoonoses and veterinary Microbiology |
| P954 | 431 | 16S RRNA PCR FOR IDENTIFICATION OF NON-PATHOGENIC LEPTOSPIRA ISOLATES. | Fatemeh Rahimi zarchi | Zoonoses and veterinary Microbiology |
| P955 | 468 | THE EFFECT OF ANTIBIOTIC, PROBIOTIC AND PREBIOTIC (DIAMOND ORIGINAL XPC) IN BROILERS FEEDING FOR SAFE FOOD PRODUCTION | Nazanin Soltani | Zoonoses and veterinary Microbiology |
| P956 | 490 | SEROPREVALENCE OF COXIELLA BURNETII IN SHEEP USING ELISA IN KERMANSHAH CITY | Afsaneh Ghobadian Emarat | Zoonoses and veterinary Microbiology |
| P957 | 503 | USING OZONE FOR BROILER BREEDING | Abdolreza Nabinejad | Zoonoses and veterinary Microbiology |
| P958 | 513 | SERO MONITORING OF NDV AND AIV (H5N1 AND H9N2) OF ISFAHAN OSTRICH CHICKS | Abdolreza Nabinejad | Zoonoses and veterinary Microbiology |
| P959 | 526 | DETECTION AND PHYLOGENETIC STUDY ON ENTERIC ASTROVIRUSES IN DIARRHEIC CALVES IN IRAN | Ahmad Nazaktabar | Zoonoses and veterinary Microbiology |
| P960 | 534 | ANTIBIOTIC RESISTANCE AND CLONAL SIMILARITY OF ESCHERICHIA COLI ISOLATED FROM BROILER CHICKENS WITH COLIBACILLOSIS | Bahman Abdi Hachesoo | Zoonoses and veterinary Microbiology |
| P961 | 541 | DETECTION OF CLASS 1 INTEGRONS IN ESCHERICHIA COLI ISOLATED FROM BROILER CHICKEN IN FARS PROVINCE OF IRAN | Bahman Abdi Hachesoo | Zoonoses and veterinary Microbiology |
| P962 | 556 | PCR-BASED DETECTION OF MYCOBACTERIUM AVIUM SUBSP. PARATUBERCULOSIS, A QUADRUPLE-MARKER APPROACH TARGETING IS900, ISMAV2, F57 AND LOCUS 255 | Parisa Nouriyeh | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
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| P963 | 569 | ANTIBIOTIC RESISTANCE PROFILES OF STAPHYLOCOCCUS AUREUS ISOLATED FROM MILK SAMPLES OF CATTLE WITH CLINICAL MASTITIS IN INDUSTRIAL FARMS OF HAMEDAN | Ayda Alvandi | Zoonoses and veterinary Microbiology |
| P964 | 575 | ISOLATION AND IDENTIFICATION OF DERMATOPHYTE AND NON-DERMATOPHYTE SPECIES AND ISOLATES THE MOLECULAR ANALYSIS OF SWIMMING POOLS OF ESFAHAN. | Samira Shirazi | Zoonoses and veterinary Microbiology |
| P965 | 578 | EVALUATE THE POSSIBILITY OF CANDIDA ALBIKANS CLINICAL STRAINS IN LIQUID AND SOLID MEDIUM BY MEANS OF ZATARIA MULTIFLORA AND TO STUDY THE EFFECT OF ZATARIA MULTIFLORA ON CANDIDA MORPHOLOGY WITH TEM. | Samira Shirazi | Zoonoses and veterinary Microbiology |
| P966 | 594 | THE COMPREHENSIVE MOLECULAR SURVEILLANCE OF TWO HONEY BEE VIRUSES IN IRAN; 2015-2016 | Mohammadreza Ghorani | Zoonoses and veterinary Microbiology |
| P967 | 595 | DEVELOPMENT AND VALIDATION OF TAQMAN REAL TIME RT-PCR TEST FOR DETECTION AND QUANTIFICATION OF INFECTIOUS BRONCHITIS VIRUS ON THE BASIS OF INFECTIOUS DOSE | Hediye Mohammadloo | Zoonoses and veterinary Microbiology |
| P968 | 596 | DEVELOPMENT OF RRT-PCR TAQMAN FOR DETECTION OF NEWCASTLE DISEASE VIRUS | Niloofar Zadehgan hasani | Zoonoses and veterinary Microbiology |
| P969 | 597 | ISOLATION OF ESCHERICHIA COLI FROM MILK SAMPLES COLLECTED OF CASES WITH CLINICAL MASTITIS IN HAMEDAN PROVINCE | Elaheh Ghytasranjbar | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P970 | 603 | A SEROLOGICAL SURVEY ON COXIELLA BURNETII IN PREGNANT WOMEN WITH HISTORICAL CONTACT WITH ANIMALS REFERRED TO CLINICAL AND CENTER HEALTH IN KHORRAMABAD CITY | Eiman Azizyari ghobadi | Zoonoses and veterinary Microbiology |
| P971 | 604 | THE COMPARISON OF SEROLOGICAL ON COXIELLA BURNETII IN PREGNANT WOMEN IN IRAN | Eiman Azizyari ghobadi | Zoonoses and veterinary Microbiology |
| P972 | 705 | DETECTION OF MYCOTIC ABORTION IN SHEEP AND GOAT FLOCKS IN IRAN | Seyede sajedeh Moosavi | Zoonoses and veterinary Microbiology |
| P973 | 707 | CLONING AND EXPRESSION OF S1 GENE PROTEIN OF IBV (GENOTYPE VARIANT 2) IN PET28A | Naser Sadri | Zoonoses and veterinary Microbiology |
| P974 | 733 | DETECTION AND MOLECULAR IDENTIFICATION OF THE SALMONELLA FROM DOG FECAL SAMPLES | Niloofar Jelokhani niarki | Zoonoses and veterinary Microbiology |
| P975 | 763 | SEROPREVELENCE STUDY OF Q FEVER IN COWS IN KHORRAMABAD BY ELISA TECHNIQUE | Fatemeh Ghalandari | Zoonoses and veterinary Microbiology |
| P976 | 819 | THE SEROPREVALENCE SURVEY OF TOXOPLASMA GONDII INFECTION IN DOMESTIC CATS OF QAZVIN CITY | Mohammad Khojasteh | Zoonoses and veterinary Microbiology |
| P977 | 820 | ISOLATION OF CHRYSEOBACTERIUM JOOSTEI FROM UNHEALTHY STELLATE STURGEON (A CASE STUDY: ESTAHBAN STURGEON FARM, FARS PROVINCE, IRAN) | Nima Shiry | Zoonoses and veterinary Microbiology |
| P978 | 834 | A SEROEPIDEMIOLOGICAL SURVEY OF Q FEVER AMONG SHEEP AND GOAT BY ELISA IN CITY ALSHTAR,IRAN PROVINCE | Samaneh Heydari | Zoonoses and veterinary Microbiology |
| P979 | 835 | SEROLOGIC STUDY OF Q FEVER IN SHEEP AND GOAT POPULATION OF LORESTAN PROVINCE BY ELIZA METHOD | Samaneh Heydari | Zoonoses and veterinary Microbiology |

| Code | ID | Title | Submission Author | Session |
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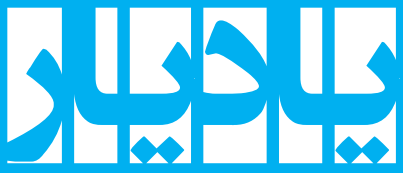
| P980 | 837 | COMPARISON OF IFA AND ELISA TECHNIQUES FOR DIAGNOSIS OF COXIELLA BURNETII | Saba Baharvand | Zoonoses and veterinary Microbiology |
| P981 | 840 | SURVEY ON CONTAMINATION OF PUBLIC PARKS OF DIVANDARREH CITY BY TOXOCARA PARASITE EGGS IN 2016 | Maryam Moradnia | Zoonoses and veterinary Microbiology |
| P982 | 846 | EXPERIMENTAL EVALUATION OF PATHOGENICITY OF AEROMONAS VERONII IN THE BELUGA (HUSO HUSO, LINNAEUS, 1758) | Nima Shiry | Zoonoses and veterinary Microbiology |
| P983 | 914 | DETECTION OF PATHOGENIC LEPTOSPIRAE IN PERSIAN SQUIRRLS (SCIURUS ANOMALUS) URINE SAMPLES BY PCR ASSAY | Nazanin Khanbabaiy ardi | Zoonoses and veterinary Microbiology |
| P984 | 948 | CRIMEAN CONGO HEMORRHAGIC FEVER | Narges Babevey | Zoonoses and veterinary Microbiology |
| P985 | 1003 | THE FIRST REPORT OF NOSOPSYLLUS FASCIATUS FLEA INFECTION IN HEMIECHINUS AURITUS OF NORTH OF IRAN | Nikki Nabavi mousavi | Zoonoses and veterinary Microbiology |
| P986 | 1004 | SEROPREVALENCE OF OVINE TOXOPLASMOSIS FROM SHEEP IN GOLESTAN PROVINCE NORTHERN IRAN | Nikki Nabavi mousavi | Zoonoses and veterinary Microbiology |
| P987 | 1006 | HUMAN DERMATITIS CAUSED BY OPHIONYSSUS NATRICIS, A SNAKE MITE | Nikki Nabavi mousavi | Zoonoses and veterinary Microbiology |
| P988 | 1008 | PREVALENCE OF Q FEVER AMONG SLOUGHTERHOUSE WORKERS IN KHORRAMABAD | Siavash Pirhayati | Zoonoses and veterinary Microbiology |
| P989 | 1009 | A SURVEY OF LISTERIA MONOCYTOGENES INFECTION IN ABORTED FETUSES OF SHEEP AND GOATS | Mona Hamedi | Zoonoses and veterinary Microbiology |
| P990 | 1039 | CORRELATION BETWEEN HUMAN DEVELOPMENT INDEX AND LISTRIOSIS IN THE SIX AREAS COVERED BY WORLD HEALTH ORGANIZATION | Maryam Mirzaei | Zoonoses and veterinary Microbiology |

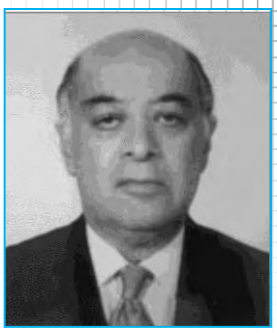
| Code | ID | Title | Submission Author | Session |
|---|---|---|---|---|
| P991 | 1049 | INVESTIGATES THE EPIDEMIOLOGIC SITUATION OF PATIENTS WITH CRIMEAN_CONGO HEMORRHAGIC FEVER MAZANDARAN PROVINCE IN THE YEAR 2015 | Kamran Molaei | Zoonoses and veterinary Microbiology |
| P992 | 1131 | USING MIXTURE OF GARLIC AND MELISSA ESSENTIAL OILS FOR PARROTS SCALY LEG TREATMENT | Abdolreza Nabinejad | Zoonoses and veterinary Microbiology |
| P993 | 1157 | DETERMINATION OF HELMINTHES PARASITES IN ABDOMINAL CAVITY OF ALOSA CASPIA FROM THE SOUTHEAST PART OF THE CASPIAN SEA | Mohammad Mazandarani | Zoonoses and veterinary Microbiology |
| P994 | 1158 | SURVEY ON HELMINTHIC INFECTIONS IN ABDOMINAL CAVITY OF CASPIAN SEA BREAM (ABRAMIS BRAMA ORIENTALIS) IN ALAGOL DAM – GOLESTAN- IRAN | Mohammad Mazandarani | Zoonoses and veterinary Microbiology |



... یادشان زمزمه نیمه شب مستان باد

تا نگویند که از یاد فراموشانند...

## زنده یاد دکتر علیرضا امیری قراگزلو



دکتر علیرضا امیری قراگزلو فرزند مرحومان غلامحسین و اخترالملوک قراگزلو در تاریخ ۱۵ اردیبهشت ماه سال ۱۳۱۰ خورشیدی در شهر همدان به دنیا آمدند. وی تحصیلات ابتدائی و دوره اول دبیرستان را در مدرسه "آلیانس"(متعلق به فرانسویان ) در همان شهر به پایان رسانده و پس از دریافت گواهینامه این دوره در سال ۱۳۲۴ خورشیدی جهت ادامه تحصیل عازم کشور انگلستان شدند.ایشان پس از فراگیری زبان و پایان دوره دبیرستان رهسپار امریکا شده و در دانشگاه معروف UCLA در لس‌آنجلس (کالیفرنیا ) موفق به اخذ درجه لیسانس و فوق لیسانس در رشته باکتریولوژی گردیدند. دکتر قراگزلو در سال ۱۹۶۳ میلادی (۱۳۴۴ خورشیدی )به منظور سپری کردن دوره تحصیلات عالی به سویس رفته و از دانشگاه ژنو در این کشور موفق به اخذ درجه دکتری ( PHD) در رشته میکروب‌شناسی شده و جهت خدمت به کشورش به ایران بازگشت .ایشان از همان ابتدا در دانشگاه تهران مشغول به کار شده و در دانشکده بهداشت این دانشگاه به تدریس , تحقیق و پژوهش پرداخته و سرانجام با کسب درجه استاد تمامی به افتخار بازنشستگی نائل آمد .

دکتر قراگزلو در خلال انجام خدمات دانشگاهی از انجام کار و خدمات حرفه‌ای نیز غافل نشده و اقدام به تاسیس" آزمایشگاه مرکزی پاتوبیولوژی " به عنوان قدیمی‌ترین و معتبرترین آزمایشگاه تشخیص پزشکی در ایران نمودند. شادروان دکتر امیری قراگزلو در اسفند ماه سال ۱۳۴۴ خورشیدی با سرکار خانم سودابه کیکاوسی ازدواج کرده که حاصل زندگی شیرین آنها دو فرزند برومند بود. یاسمن امیری قراگزلو در انگلستان تحصیل کرده و مدرک دانشگاهی خود را در رشته "سامانه های انفورماتیک " از "مدرسه اقتصاد لندن " کسب کرده و حسینقلی امیری قراگزلو به مانند پدر در دانشگاه UCLA کالیفرنیا به تحصیل پرداخته و دارای مدرک فوق لیسانس الکترونیک می‌باشند. ایشان شخصی وطن پرست و انسانی فروتن و مردم دوست بودند و در این راه از انجام هیچگونه خدمت و کمک معنوی و مادی دریغ نمی‌کردند. در کارهای علمی و حرفه ای نیز همواره و بدون وقفه شرکت داشته و خلاق و نوآور بودند و در انجام کارهای علمی و حرفه‌ای همواره با " مرکز علمی کلیندل لندن "[1] ارتباط داشته و همچنین کارشناس "سازمان بهداشت جهانی " بودند. این سازمان در اوان انقلاب به ایشان پیشنهاد

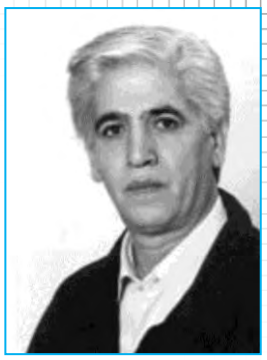
1. (Refrence Division,Colindale :Public Health England Microbiology )

ادامه همکاری در خارج از کشور را دادند که با توجه به علاقه وافر ایشان به میهن خود آن را قبول نکردند. آقای دکتر قراگزلو در مجموع صاحب ۲۷ مقاله و کار تحقیقاتی و مشاوره و استاد راهنمای بیش از ۳۰ رساله فوق لیسانس و دکتری در زمینه میکروب‌شناسی بودند. از دیگر کارهای مهم ایشان می‌توان به تاسیس دو مرکز مطالعاتی بین‌المللی با همکاری "سازمان بهداشت جهانی " در دانشگاه تهران اشاره کرد .

شادروان دکتر علیرضا امیری قراگزلو در خرداد ماه سال ۱۳۹۴ خورشیدی به رحمت ایزدی پیوسته و هم اکنون جای خالی ایشان در جامعه علمی و حرفه ای میکروب شناسی کشور احساس می‌گردد .

**روحشان شاد و یادشان گرامی باد .**

اداره دبیرخانه شورای عالی فرهنگ
وزارت فرهنگ



## زنده یاد دکتربهمن تبرایی

دکتر بهمن تبرایی در روز ۲۰ اسفند ۱۳۲۶ در شهر کرمانشاه به دنیا آمد. ایشان پس از طی تحصیلات ابتدایی و متوسطه، لیسانس خود را در رشته میکروب‌شناسی در سال ۱۹۷۵ در دانشگاه اوترخت هلند، سپس دوره فوق لیسانس خود را در سال ۱۹۷۷ در رشته میکروب شناسی پزشکی و دوره دکترای پژوهشی خود را در همان سالها از دانشگاه پنجاب هندوستان دریافت نمود. پس از سالها تلاش و کسب تجربه‌های ارزشمند در زمینه بیولوژی باکتری‌های گرم منفی و تکنیکهای بیوتکنولوژی و کاربرد این شاخه از علم که در آن سالها دانش نوپا و تازه واردی بود ، موفق شد در سال ۱۹۸۰ عضو هیئت علمی انستیتو پاستور ایران گردد. در سال ۱۹۹۰ PhD خود را در رشته بیوتکنولوژی میکروبی شاخه پزشکی در شهر زیبای چندیگر هندوستان به پایان رساند. در سال ۱۹۹۲ از طرف انجمن علوم پزشکی هندوستان بخاطر کار و تحقیقات ایشان روی واکسن توکسویید باکتری مولد بیماری وبا، برنده جایزه دانشمندان جوان کشور هند گردید . ایشان در سال ۱۹۹۲ به ایران ، بازگشتند و همزمان با تحقیق ، شروع به تدریس در دانشگاه های مختلف کشور نمودند .ایشان تا سال ۱۹۹۹ ، مسئول بخش واکسن انستیتو پاستور ایران بوده و پس از آن نیز در زمینه تولید واکسن، تشخیص و تولید آنتی ژن در انستیتو پاستور مشغول به فعالیت بودند. با داشتن کوله باری از تجربه در زمینه بیوتکنولوژی پزشکی، بعنوان ادای دینی به زندگی علمی خود و خدمت به هم میهنان، در سال ۱۹۹۵ مرکز تولیدی، تحقیقاتی و صنعتی را بنام کوشا فرآور گیتی تاسیس نمود که هم اینک نیز دایر است و محصولات بیولوژیک و آزمایشگاهی تولید می‌نماید. در همان سال، مشاور بیوتکنولوژی وزارت صنایع و معادن گردید . ایشان در دانشگاه‌های مختلف و موسسات تحقیقاتی معتبر دوره‌های آموزشیِ میکروب شناسی را برای دوره‌های فوق لیسانس و PhD تدریس می‌کردند. وی عضو همیشگی چندین انجمن میکروبیولوژی در جهان، انجمن میکروبیولوژیست‌های پزشکی هند، انجمن بیوتکنولوژی ایران و همانطور که گفته شد، عضو هیئت علمی انستیتو پاستور ایران نیز بودند. همچنین از جمله جزو نخستین افرادی هستند که برای شکل‌گیری انجمن میکروب شناسی ایران همت گماردند. از افتخارات ایشان، داشتن چندین گواهی نامه معتبر علمی (Patent) در زمینه ثبت نوآوری‌ها و ابداعات و دارا بودن بیش از پنجاه مقاله فارسی و بیش از بیست مقاله انگلیسی است. در سال ۲۰۱۱، ایشان از انستیتو پاستور ایران بازنشست شدند و پس از بازنشستگی همچنان جامعه علمی ایران از راهنمایی‌های ایشان بهره‌مند می‌شد. بیش از همه

فعالیتهای علمی، ایشان از لحاظ داشتن روحیه نوع دوستی، تواضع و فروتنی و صمیمیت با دانشجویان خود، زبانزد محافل علمی، اساتید و دوستان خودشان بود که محبوبیت ایشان را دوصد چندان می نمود . بسیاری از محقیقن و اساتید میکروب شناسی کشور از شاگردان ایشان بوده اند و خاطرات بسیار زیادی از ایشان به یاد خواهند داشت. با افسوس فراوان، ایشان از سالِ ۲۰۱۴ مبتلا به سرطان مثانه گردید و علی رغم کوششهای درمانی و جراحی که برای ایشان انجام شد، در تاریخ بیست و سوم جون ۲۰۱۷ در کشور آلمان درگذشت. یاد و خاطرهٔ این مرد بزرگ همواره در ذهن جامعه علمی ایران و بخصوص جامعه میکروب شناسی، پایدار خواهد ماند و امیدواریم روح ایشان همیشه شاد باشد.

یادداشت :

# Oral Presentation

**18th International & Iranian Congress of Microbiology**

# TS OF LATRODECTUS DAHLI VENOM FRACTIONS

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**Background and Aim:** Bacterial antibiotic resistance has been reported as one of the world's most critical public health problems. Recent investigations have demonstrated that some isolated peptides from venomous animals such as spiders have a wide range of biological and pharmacological activity that are effective in treating certain diseases. The purpose of this study was to examine the effects of antibacterial and antitumor activity of the venom fractions from the Black widow spider's (Latrodectus dahli) in vitro condition.

**Methods:** Electrophoresis and chromatographic patterns of crude venom were analyzed using SDS-PAGE and HPLC techniques respectively and venom fractions were isolated using C18 reverse phase column. The antibacterial effects were evaluated on Bacillus subtilis, Staphylococcus aureus, and Escherichia coli using MIC assay and MIT reduction test. The cytotoxicity effects were analyzed on MCF-7 and Vero cell lines using MIT reduction assay, Neutral red uptake test and comet assay.

**Results:** SDS-PAGE electrophoresis analysis showed that the crude venom has 8 bands (12.13-108.6 kDa) which were isolated in 4 fractions using HPLC technique. The results of this finding demonstrated that crude venom fractions are more toxic on Bacillus subtilis and Staphylococcus aureus as compared to Escherichia coli. The results displayed that isolated fractions of crude venom showed a noticeable toxicity effects on Vero and no inhibitory activity on MCF-7 cell line.

**Conclusion:** In conclusion, results of this investigation indicate the presence of toxic molecules toward bacteria and cancer cells in Black widow spider's venom which may lead to the development of new effective antibacterial and anticancer drugs.

**Keywords:** Black widow spider, Latrodectus dahli, antibacterial effect, cytotoxicity, cancer

# O2 - 181: GENOMIC COMPARISONS OF TWO VANCOMYCIN-RESISTANT STAPHYLOCOCCUS AUREUS ISOLATES FROM KERMAN, IRAN

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**Background and Aim:** Vancomycin is the important antibiotic for treatment of methicillin-resistant Staphylococcus aureus (MRSA) infections. Emergence of vancomycin resistant Staphylococcus aureus (VRSA) strain is a global threat in public health. Herein, we report genetic characterization of the first VRSA isolates in Kerman, Iran.

**Methods:** VRSA isolates were screening by phenotypic method according to recommendations of the CLSI. PCR technique used for detection of mecA, vanA, vanB, ermA, B, C, mrsA/B, encoding aminoglycoside modifying enzymes (AME), pvl, immune evasion cluster (IEC), icaABCD genes in VRSA isolates. Staphylococcal cassette chromosome mec (SCCmec), spa and multiple locus variable number of tandem repeats analysis (MLVA) typing methods were used for molecular typing.

**Results:** VRSA isolates recovered from different patients were admitted to 2 affiliated hospitals in Kerman. Out of two VRSA, one isolates was positive for vanA, ermA, ermC, aph(2")-Ic, aph(3')-IIIa, sea, icaD and belonged to SCCmec III and spa type t459 with MIC?64µg/ml and other VRSA isolate was positive for vanA, ermA, ermC, aph(2")-Ic, aph(3')-IIIa, sea, sep, icaD and belonged to SCCmec III and spa type t030 with MIC?64µg/ml. The two isolates were negative for pvl gene and were different in one VNTR loci (VNTR63) from 8 VNTR loci in MLVA method.

**Conclusion:** Molecular typing revealed that VRAS isolates were from different clone. Since the VRSA strain is a global threat in public health more stringent infection control policies are needed to prevent the transmission of such life threatening isolates in the health care units in our hospitals.

**Keywords:** Vancomycin resistance, IEC, SCCmec, spa typing, MLVA typing

# O3 - 201: FREQUENCY ANALYSIS OF ACRAB-OPRM EFFLUX PUMP GENES PREVALENCE IN CREATING ANTIBIOTIC RESISTANCE IN *MORAXELLA CATARRHALIS* CAUSING RESPIRATORY INFECTIONS WITH MULTIDRUG RESISTANCE IN CLINICAL SPECIMENS OF KAZEROON CITY

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**Background and Aim:** Moraxella Catarrhalis is an important factor is the lower and upper respiratory infections. RND family efflux pumps cause multi-drug resistance in gram-negative bacteria. One of the known pumps in M. Catarrhalis is AcrAB-OprM system. The aim of this study is to investigate antibiotic resistance in M. Catarrhalis bacteria and determining antibiotic resistance dependence to the efflux pump.

**Methods:** In this study, 136 different clinical specimens were collected from Baqer ol Olum clinic and laboratory and Valiasr hospital in Kazeroon city over 6 months. M. catarrhalis strains were identified by phenotypic and genotypic methods (SrRNA16). According to CLSI 2016 protocol the antibiotic susceptibility pattern was determined by disk diffusion method and analyzed by whonet V5.6 software. Finally, the presence of efflux pump was tested by Cartwheel phenotypic method and efflux pump identity was determined by acra, acrb and oprm genes detection. Moreover, the relationship between the existence of efflux pump and antibiotic resistance was determined by Phenylalanine β-naphthylamide.

**Results:** Among 136 isolated samples, 10 M. Catarrhalis bacteria were identified 7 strains of which had multiple antibiotic resistances and all multi-drug resistant isolates had acra, acrb and oprm genes. Cefazolin, Sftazdym, tetracycline, chloramphenicol and ciprofloxacin resistances were dependent on efflux pump because their antibiotic susceptibility was increased in the presence of efflux pump inhibitor.

**Conclusion:** The presence of acra, acrb and oprm genes in 70% of isolated samples indicates the activity of efflux pumps in this bacterium; therefore, determining the appropriate model for the treatment of patients infected with these bacteria is important.

**Keywords:** Moraxella Catarrhalis, multiple antibiotic resistance, AcrAB-OprM efflux pump

# O4 - 215: THE ROLE OF EFFLUX PUMPS IN THE INDUCTION CHARACTERISTICS OF ANTIBIOTIC RESISTANCE IN ACINETOBACTER ISOLATES FROM CLINICAL SPECIMENS

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**Background and Aim:** Nowadays, frequency of multi-drug resistant *Acinetobacter baumannii* as an important emerging nosocomial pathogen is increasing.However several antibiotic resistant mechanism have identified in Acinetobacter, but antibiotic resistant property associated to efflux pump could be considered an important antibiotic resistant mechanism.probably high frequency of occurrence of multi-drug resistan.

**Methods:** Generally, 75 clinical samples were collected from Namazi hospitalised, Iran during 6 months. The presumptive Acinetobacter isolates identified using phenotypic and genotypic (16SrRNA) methods. Antibiotic susceptibility of the isolates was assessed by Disk diffusion method and the presence of efflux pump was evaluated using phenotypic Cartwheel method. Finally, existence of efflux pump genes was carried out by PCR method. In addition, relationship between the existence of efflux pump and drug resistance was evalutad using the phenylalanine beta-naphthyl amide inhibitor.

**Results:** The results showed that 26 Acinetobacter isolates were multi-drug resistance. The highest resistance character was observed against meropenem, cefotaxime, ceftazidime and imipenem, and the lowest resistance property was observed against polymyxin. Furthermore,efflux pump was phenotypically observed in 16 isolates (61.53%) of Acinetobacter isolates an resistance to Amikacin and gentamicin was related to efflux pump activity.

**Conclusion:** The results of this study showed that A. baumannii was widely existed at Namazi hospital. Hence, it is one of the importance nosocomial infection in this hospital. In addition, most of Acinetobacter were multi-drug resistance and antibiotic resistant mechanism of them could be related to efflux pump activity.

**Keywords:** Acinetobacter, antibiotic resistance, efflux pumps

# O5 - 288: FAST DETECTION OFSTREPTOMYCIN RESISTANT ISOLATES OF CLINICALSTRAINSMYCOBACTERIUM TUBERCULOSISBYPCR-RFLP AND SEQUENCING METHODS

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**Background and Aim:** In this study, a PCR-RFLP method for rapid detection of Mycobacterium tuberculosis clinical isolates resistant to streptomycin was designed and the compared by sequencing results

**Methods:** In this study 59 clinical isolates of Mycobacterium tuberculosis with positive culture and biochemical methods were used. Specific primers used for PCR.PCR-RFLP method by the MboII endonuclease was used for detection probably mutation. The results were compared with sequencing as golden standard. Some selected isolates were sent for sequencing to Source Bioscience company.

**Results:** From 59 isolates, 48strains were resistant and 11 ones were susceptible phenotypically. As a result of molecular method, all of susceptible isolates were non mutant by PCR-RFLP method. In the other hand, 70.83of all resistant strains have mutation in rPSL43 Results of sequencing method were proved the results of molecular method

**Conclusion:** The results of this study indicate that the PCR-RFLP method can be used in routine work as a simple and rapid method for detection of resistance to streptomycin.

**Keywords:** Mycobacterium tuberculosis, drug resistance, streptomycin, PCR-RFLP

# O6 - 294: LOW-LEVEL LASER PHOTOTHERMAL THERAPY COMBINED WITH BIOCOMPATIBLE SURFACE-MODIFIED AUNPS AGAINST PSEUDOMONAS AERUGINOSA STRAIN

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**Background and Aim:** Nowadays the increasing prevalence of resistant isolates of Pseudomonas aeruginosa has become a global dilemma. The aim of this study was to evaluate an effective strategy to destroy bacteria using low-level laser photothermal therapy combined with biocompatible surface-modified AuNPs.

**Methods:** Chitosan, PLGA [poly (lactic-co-glycolic acid)] and NIPAM [Poly(N-isopropylacrylamide)] were coated onto gold nanoparticles with a core/shell size of 108, 10 and 120 nm, respectively and were confirmed with TEM devices. Efficacious polymerization and surface coating of AuNPs was confirmed by FT-IR method. The standard strain of P. aeruginosa (IPM-2) were exposed to different doses of low level NIR laser (810 nm) radiation in the presence or absence of the as-prepared surface-modified AuNPs (in a 1:1 ratio) and the bactericidal efficiency of the radiated laser doses was considered based on pour-plate colony count methods.

**Results:** Our study revealed that in the presence of three polymers the viability of bacteria was decreased along with an increase of the laser dose. The PLGA@AuNPs exhibited the most effective photothermal killing characteristic against P. aeruginosa strain. As radiation 10 joules of energy, were destroyed almost all of P. aeruginosa strain.

**Conclusion:** Our finding was demonstrated that nanoparticles coated with chitosan compared with two polymers, showed high bactericidal effects.

**Keywords:** Antibiotic resistance, photothermal therapy, Pseudomonas aeruginosa

# O7 - 295: HIGH FREQUENCY OF METRONIDAZOLE AND CLARITHROMYCIN RESISTANT HELICOBACTER PYLORI IN FORMALIN-FIXED, PARAFFIN-EMBEDDED GASTRIC BIOPSIES: THE FIRST REPORT OF AN IRANIAN REFERRAL PEDIATRICS HOSPITAL

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**Background and Aim:** Resistance to clarithromycin and metronidazole as two powerful antibiotics currently used for Helicobacter pylori treatment is the leading predictor of failure of eradication treatments including these compounds. The aim of our study was to evaluate the common mutations of resistance genes to clarithromycin (A2143G, A2142G and A2142C) and metronidazole (rdxA and frxA) in H. pylori strains in formalin-fixed, paraffin-embedded gastric biopsies.

**Methods:** A total of 110 formalin-fixed, paraffin-embedded tissue blocks belonged to the children who were suspicious for H. pylori infection were included in the study. After DNA extraction, UreC PCR was performed for all isolates. Specific primers and restriction enzymes by PCR-RFLP were used for analysis of A2143G and A2142G mutations. To detect A2142C and assess frequent mutations of metronidazole resistance, specific primers and PCR method were used.

**Results:** One-hundred strains of H. pylori (91%) was found using PCR method. Of 34 (34%) clarithromycin resistant strains 17 (50%), 10 (29%), 7 (21%) had A2143G, A2142G, A2142C respectively. Resistance rate to metronidazole was reported 60% (N=60). The result of sequencing for two rdxA and frxA genes showed that among the mutated strains, missense mutation had the highest rate.

**Conclusion:** Resistance rate to clarithromycin was high and the highest percentage of mutation was belonged to A2143G mutation. PCR-RFLP was used directly with formalin-fixed gastric biopsies in our study, thus the requirement for time-consuming culture-based methods was avoided. Also, the strains that developed resistance were mainly associated with mutations of both rdxA and frxA genes.

**Keywords:** Helicobacter pylori, clarithromycin, metronidazole, mutations

# O8 - 296: PHENOTYPIC AND GENOTYPIC DETERMINANTS OF MUPIROCIN RESISTANCE AMONG STAPHYLOCOCCUS AUREUS ISOLATES RECOVERED FROM CLINICAL SAMPLES OF CHILDREN: AN IRANIAN HOSPITAL-BASED STUDY

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**Background and Aim:** The aim of this study was to evaluate both phenotypic and genotypic determinants of mupirocin resistance among methicillin-resistant Staphylococcus aureus (MRSA) and methicillin susceptible S. aureus (MSSA) strains recovered from different clinical samples of children who were admitted to the Children's Medical Center (CMC) Hospital, Tehran, Iran.

**Methods:** A total of 120 clinical isolates of S. aureus were collected from microbiology laboratory of CMC Hospital. The minimum inhibitory concentrations (MIC) of vancomycin and mupirocin were determined by broth microdilution and E-test methods, respectively. Strains that their mupirocin MICs were ≥512 µg/ml were considered as high-level mupirocin resistant (HLMR). The presence of genes encoding HLMR (i.e. the mupA and mupB genes) was evaluated by PCR method.

**Results:** Four out of 120 isolates (3%) had mupirocin MIC≥ 512 µg/ml and were HLMR. Fifty-two isolates (43%) were MRSA and there were no differences in the distribution of mupirocin resistance among MRSA and MSSA isolates ($P > 0.05$). The PCR method identified the mupA gene in 2 out of 4 HLMR isolates, and the mupB gene was not detected in any HLMR isolates.

**Conclusion:** According to the low resistance rates of vancomycin, linezolid, mupirocin, quinupristin–dalfopristin, and rifampicin in MRSA isolates, it is recommended to use these antibiotics for treatment of infections caused by MRSA. Considering the increasing need of mupirocin for the control of S. aureus infections, continuous checking of its susceptibility status is necessary.

**Keywords:** Methicillin-resistant Staphylococcus aureus, Mupirocin, PCR, Children

# O9 - 327: DISTRIBUTION OF SCCMEC ELEMENTS AND PRESENCE OF PANTON-VALENTINE LEUKOCIDIN IN METHICILLIN - RESISTANT STAPHYLOCOCCUS EPIDERMIDIS ISOLATED FROM CLINICAL SAMPLES IN A UNIVERSITY HOSPITAL OF ISFAHAN CITY, IRAN

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**Background and Aim:** Coagulase Negative Staphylococcus (CoNS) are considered as a major pathogen of nosocomial infections among immunosuppressed patients. Aim: The aim of this study is to identify the types of SCCmec and PVL gene among clinical methicillin - resistant S. epidermidis isolates collected from Isfahan.

**Methods:** This cross-sectional study was performed during March 2014 to January 2015 at a tertiary care hospital of Isfahan, Iran. Antimicrobial susceptibility tests of S. epidermidis isolates were performed by the disc diffusion method. All the strains were screened for methicillin resistance based on resistance to cefoxitin (30 µg) discs and presence of mecA gene. Determination of SCCmec typing and PVL toxin gene were performed by PCR method. For categorical variables different groups were compared using the Chi-square test or Fisher exact test. A p-value of $<0.05$ was considered significant for all statistical tests

**Results:** The frequency of MRSE was 53.8% according to the presence of mecA gene. The overall resistance rate was high with ciprofloxacin (81.4%). PCR analysis showed that 17% (12/70) of MRSE isolate carried the PVL gene and 43% (30/70) were SCCmec type I; 11.4% (8/70) were type II; and 34.2% (24/70) were type IV, whereas, 11.4% (8/70) of the MRSE isolates could not be typed.

**Conclusion:** According to our results SCCmec type I was the major type of SCCmec, which can indicate an emergence of this SCCmec type in the studied medical centers. Also, antimicrobial susceptibility pattern showed, ciprofloxacin (81.4%) and Co-trimoxazole (64%) had the highest resistance.

**Keywords:** Antibiotic susceptibility, Staphylococcus epidermidis, staphylococcal cassette chromosome mec

# O10 - 348: PREVALENCE OF BLA NDM− 1-PRODUCING KLEBSIELLA PNEUMONIAE IN ASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** NDM-1 gene (blaNDM−1)-producing Klebsiella pneumoniae is allegedly perceived as one of the most dangerous multidrug-resistant bacteria causing infections in hospitals and clinic domains. In numerous Asian countries, sporadic studies have been conducted to investigate the prevalence of blaNDM−1-producing K. pneumoniae. In the present study, we determine the precise prevalence of blaNDM−1-producing K. pneumoniae in different parts of Asia indeed.

**Methods:** Several international databases including Medline, Embase, and Web of sciences were searched from March 2005 to Jan 2016 to discern studies addressed the prevalence of blaNDM−1-producing K. pneumoniae in Asia. Comprehensive meta-analysis (V2.2, Biostat) software was used to interpret the data.

**Results:** Of the 595 records identified from the databases, 19 studies fulfilled the eligibility criteria ostensibly. The analyses manifested that the prevalence of blaNDM−-producing K. pneumoniae was 32.5% [95% confidence interval (95% CI) 22.6–44.3] in the analyzed Asian countries. Hence, the further stratified analyses indicated that the prevalence of blaNDM−1-producing K. pneumoniae was higher in the probes, particularly after 2010.

**Conclusion:** The relatively high prevalence of blaNDM−1-producing K. pneumoniae merits our analysis. Moreover, regular surveillance for hospital-associated infection, monitoring antibiotic sensitivity pattern, and formulation of definite antibiotic policies advocates viable roles for prevention and control of blaNDM−1-producing K. pneumoniae.

**Keywords:** NDM-1, K. pneumonia, Meta-analysis, Prevalence, Asia

# O11 - 381: MOLECULAR STUDY OF BLAPER AND BLAVEB GENES IN PSEUDOMONAS AERUGINOSA ISOLATES FROM CYSTIC FIBROSIS PATIENTS OF MOFID CHILDREN HOSPITAL, TEHRAN, IRAN

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**Background and Aim:** Pseudomonas aeruginosa is a gram negative and opportunistic pathogen such as Cystic Fibrosis (CF) patients. Due to increasing of antibiotic resistance this study investigated the prevalence of PER and VEB genes in P. aeruginosa isolates from sputum of cystic fibrosis patients.

**Methods:** 41 strains of P. aeruginosa were isolated from sputum of CF patients in Mofid Children hospital in Tehran during 2016-17. According to CLSI protocols, antibiotic susceptibility test (AST) was performed by using the disk diffusion method. Then the PCR was used to evaluate of PER and VEB genes. P. aeruginosa ATCC 27853, PER+ and VEB+ strains were used simultaneously.

**Results:** Among 41 isolates of P. aeruginosa, 22 (53.65%) were resistant to Amikacin, 21(51.21%) to Ofloxacin and Cefepime, 20 (48.78%) to Imipenem, 19 (46.34%) to Ceftazidime and Ciprofloxacin, 18 (43.9%) to Aztreonam, 17 (41.46%) to Piperacillin, 16 (39.02%) to Gentamicin, 14 (34.14%) to Piperacillin-Tazobactam and 1 (2.43%) to Colistin. By PCR results 5 (12.19%) and 1(2.43%) of the isolates had PER and VEB genes.

**Conclusion:** The results of this study showed the high rate of antibiotic resistance. Among the most of antibiotics that were tested, Colistin is the best choice for treatment. The frequency of PER gene is higher than VEB in P. aeruginosa by PCR. To reduce the rate of resistance it is necessary to control bacterial dissemination.

**Keywords:** Pseudomonas aeruginosa, Drug resistance, bla PER, bla VEB

# O12 - 412: INVESTIGATING OF CLARITHROMYCIN RESISTANCE GENOTYPING OF HELICOBACTER PYLORI STRAINS ISOLATED FROM PATIENTS REFERRING TO IMAM REZA HOSPITAL IN 2012 IN KERMANSHAH

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**Background and Aim:** Helicobacter pylori is the etiologic agent of chronic gastritis and is strongly associated with peptic ulcers and gastric cancer. Metronidazole and clarithromycin are the key antibiotics used in the treatment Helicobacter pylori in Iran. With increasing antibiotic resistance in Helicobacter pylori, the frequency of resistance and its genotyping can be helpful in the treatment. The aim of this study was to determine genotypes of clarithromycin resistance A2143G, A2142G and A21444G in H. pylori strains with using RFLP-PCR method.
**Methods:** Biopsy specimens of 360 patients referred to Imam Reza Hospital were isolated. The samples were cultured on Columbia agar medium containing egg with vancomycin, trimethoprim and amphotericin B. Diagnostic tests and PCR for gene Urec used for to identify bacteria. After PCR to detect mutations A2143G, A2142G and A21444G used enzymes like MboII, BsaI and NIaIV.
**Results:** From 360 samples, 174 strains of H. pylori were isolated. 11 strains resistant to clarithromycin were identified by disk diffusion method. 7 samples of resistant strains showed mutations A2143G. A2142G and A21444G mutations were not observed.
**Conclusion:** Most mutations causing resistance to clarithromycin in Kermanshah is related to mutation in A2143G. Due to the presence of resistant strains that have none of the mentioned mutations, it can be concluded that there are other mutations in these strains that is not detectable by this method. Due to the low prevalence of clarithromycin resistance, this antibiotic can be used to treat H. pylori infection.

**Keywords:** Helicobacter pylori, clarithromycin, mutation

# O13 - 523: MOLECULAR DETECTION OF SHV, TEM, CTX GENES AMONG UROPHATOGENEIC ESCHERICHIA COLI IN WOMEN WITH ACUTE CYSTITIS

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**Background and Aim:** One of the most common individuals for consumption of antibiotics in community is women suffering from acute bacterial cystitis. Escherichia coli is responsible for the majority of cases. Extended spectrum beta lactam antibiotics which used for treatment this infection can be useless by Beta-lactamase. Because of the common Extended Spectrum Beta lactamase (ESBLs) genes such as shv, tem, ctx are carried on plasmid and transposone, there is a rising prevalence in antibiotic resistance. In this study, occurrence of ctx, tem and shv genes were estimated among urophatogenic E. coli isolated from women suffering from cystitis.

**Methods:** One hundred E. coli isolates collected from women with symptoms of cystitis. Susceptibility of isolates and ESBL phenotype screening were determined by disk diffusion agar. The presence of ctx, tem, shv genes were detected by PCR method.

**Results:** Resistance pattern of these isolates revealed that 74.4%, 55.3% and 29.7% of isolates are resistance to SXT, CP and GM respectively. Out of 100 E. coli isolates, 32% isolates showed a positive ESBL phenotype. Detection of Beta-lactamase genes in isolates showed that the presence of ctx, shv and tem genes among (69.5%), (47.4%) and (44%), respectively. Presence of two and three ESBL genes in a single isolates occurred in 25.4% and 32.2% isolates respectively.

**Conclusion:** Thirty Percentages of the ESBL producing strains carried at least one of the Beta-lactamase genes. Results of antibiotic susceptibility test showed that Nitrofurantoin remains appropriate empirical antibiotic for treatment of urinary tract infection.

**Keywords:** E. coli, ESBL, UTI, ctx, shv, tem

# O14 - 674: IDENTIFICATION AND DETECTION OF RIFAMPIN RESISTANCE AMONG NEW TB CASES BY GENEXPERT MTB/RIF ASSAY IN WEST OF IRAN

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**Background and Aim:** Despite Mycobacterium tuberculosis (M. tuberculosis) control program and anti-tuberculosis drugs, DR-TB is one of the most serious public Health issues worldwide. Rapid laboratory diagnosis of M. tuberculosis is need to diagnosis of MDR-TB and optimal treatment. The purpose of this study was to detect resistance to RIF in new TB cases suspected to M. tuberculosis using GeneXpert MTB/RIF assay and standard proportional method in west and north-west of Iran.

**Methods:** In a descriptive cross-sectional study, sputum samples enrolled and screened for M. tuberculosis using Ziehl-Neelsen stain and mycobacterial culture. Smear-positive TB cases were culture on Lowenstein-Jensen (LJ) medium and then the presence of resistant to RIF examined by GeneXpert MTB/RIF and standard proportional method.

**Results:** A total of 400 new cases susceptible of TB were collected, 162 (40.5%) were smear and culture-positive for M. tuberculosis. The frequencies of RIF resistant in new smear-positive TB cases were 3.1% and 4.3% using GeneXpert and standard proportional method, respectively. Sensitivity and specificity of GeneXpert compared to that of the proportional method were 71% and 100% respectively.

**Conclusion:** GeneXpert can be a quick and helpful method for the diagnosis of RIF resistant TB for regions with high rates of DR-TB or MDR-TB. GeneXpert MTB-RIF assay must be used as early diagnostic method that the results of GeneXpert must be confirmed by standard proportional method. GeneXpert and proportional method complete but do not replace each other.

**Keywords:** Mycobacterium tuberculosis, GeneXpert MTB/RIF Assay, Sensitivity, Specificity, Multidrug resistance

# O15 - 687: FUNGAL INFECTION AMONG IRANIAN PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS; MOLECULAR IDENTIFICATION AND DETERMINATION OF ANTIFUNGAL SUSCEPTIBILITY PATTERN

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**Background and Aim:** Idiopathic pulmonary fibrosis (IPF) is a chronic and progressive lung disease. This study aimed to investigate for the first time in Iran to the detect of fungal agents in IPF patients.

**Methods:** Forty nasopharyngeal (NP) swabs or bronchoalveolar lavage (BAL) samples were obtained from IPF patients from April 2015 to March 2016. The samples cultured on Sabauroud dextrose agar. PCR-sequencing were used for identification of fungal species. Antifungal susceptibility testing was conducted according CLSI (M27-S3)

**Results:** Of 40 IPF patients, 22(55%) were female and 18(45%) were male. The fungal agents include 4 (10%)Candida albicans, 2(5%) Candida glabrata and 1(2.5%) Aspergillus fumigatus. There was a significant association between the presence of C. albicans in IPF pateints and other immunosuppressive diseases ($P<0.04$). All C. albicans isolates were resistant to itraconazole and it is found 3(75%) C. albicans were resistance to amphoterecin B, 1 (25%) isolate of C. albicans was sensitive to amphoterecin B. Whereas 3(75%) C. albicans isolates, were dose dependent manner and 1(25%) were resistant to fluconazole. C. glabrata isolates were resistant to fluconazole, itraconazole and amphotricin B agents.

**Conclusion:** Taken together, in our study fungal agents were detected in 17.5% of IPF patients. Regarding the high level of resistance to antifungal drugs, identification and isolation of fungal agents as well as administrating the proper antifungals drugs may be considered in IPF patients.

**Keywords:** IPF, Candida, Aspergillus, Antifungal susceptibility

# O16 - 761: PREVALENCE OF URINARY TRACT INFECTIONS IN ZAHEDAN MEDICAL DIAGNOSTIC LABS (3 YEARS RESEARCH)

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**Background and Aim:** During the period of 2016 untill 2017,9600 urine specimens were collected from the level of Zahedan medical diagnostic laboratories which determine the level of urinary tract infections, dominant species, gender of susceptible patients, and to determine the sensitivity and resistance to antibiotics.

**Methods:** After culture of samples on the Emb and Blood agar medium,477 positive sample were identified and transferred to culture gallery tests including citrate, indole, urea, Mr-Vp, bile mannitol, and using the reference books was made to identify the specimens on bacteria according to the gallery's test results.

**Results:** The results showed that 73% of urinary tract infections related to E. coli, 10% Klebsiella, 5% Staphylococcus aureus, 5% Pseudomonas species, 4% Proteus vulgaris and about 3% also belong to Staphylococcus aureus epidermidis. The specimens were transferred to the commonly used drugs to determine the sensitivity of antibiotics to the Muller Hinton Agar medium. The results showed 92% are susceptibility to nitrofenotoin, 90% to ciprofloxacin, 80% to amikacin, 55% to gentamicin, 35% to nalidixic acid and 50% to kokteriaxazole.

**Conclusion:** Also, due to the similarity of the sensitivity of the ratio Antibiotics of amikacin and ciprofloxacin have been investigated for synergistic and antagonistic effects in in vivo conditions. Considering that 70% of the samples were isolated from women, the cause of prevalence of nearly 65% of E. coli in urinary tract infections could be found in non-compliance with personal hygiene and colonization and antigenic factors of the bacterium.

**Keywords:** Urinary tract infections, E. coli, Urinary tract infections in warm and dry areas, Antibiotic resistance

# O17 - 796: PHENOTYPICALLY AND GENETICALLY EXAMINATION THE ROLE OF EFFLUX PUMPS IN ANTIBIOTIC CROSS RESISTANCE IN P. AERUGINOSA STRAINS ISOLATED FROM BURNED PATIENTS IN IRAN.

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**Background and Aim:** Multi-drug resistance in Pseudomonas aeruginosa may be due to efflux pumps overexpression. This study examined the role of efflux pumps in antibiotic cross resistance between beta lactams, fluoroquinolones and aminoglycosides in P. aeruginosa strains isolated from burned patients.

**Methods:** A total of 91 strains of P. aeruginosa were studied. Multi-drug cross resistance to different antibiotic classes were determined by disk diffusion and MIC method. The contribution of efflux pumps was determined by MIC test for markers of mentioned antibiotics, in absence and presence of an efflux pumps inhibitor. All the isolates also tested by PCR for the presence of MexAB-OprM, MexCD-OprJ and MexEF-OprN efflux genes. Finally, expression of mentioned genes valued by RT-PCR in MDR strains.

**Results:** 89% and 91.2% of isolates were MDR. Cross resistance to tested antibiotics, observed in 74% and 75% of isolates according to the disc diffusion and MIC methods, respectively. Two fold or higher MIC reduction to imipenem, cefepime, ciprofloxacin and gentamicin were observed in 59, 65, 55 and 60 isolates, respectively. Except two isolates which were negative for MexC, rests of the isolates were positive for MexA, MexC and MexE genes simultaneously. Gene expressions of MexA, MexC and MexE were observed in 78%, 77% and 78% of MDR resistant isolates respectively.

**Conclusion:** Efflux pumps provide both innate and higher level of acquired resistance and cross resistance to different antibiotics, upon their expression in clinical isolates. Early detection of presence and expression of these pumps in P. aeruginosa should allow usage efflux pump inhibitors in combination with antibiotic therapy.

**Keywords:** Pseudomonas aeruginosa, Efflux pumps, cross resistance

# O18 - 827: ANTI-FUNGUAL ACTIVITY OF ZIZIPHORA TENUIR HYDROALCOHOLIC EXTRACTS AND ESSENTIAL OILS AGAINST CANDIDA ALBICANS ISOLATED FROM THE VAGINA

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**Background and Aim:** Candida albicans as the most common yeast is responsible for many different clinical manifestations in infectious diseases. It can cause Vulvovaginitis in women. In this study, we evaluated the anti-candidal activities of Ziziphora tenuir hydroalcoholic extracts and essential oils against clinical strains of C. albicans collected in koohsorkh kashmar region

**Methods:** This experimental study was performed on 250 women referred to health centers in Kashmar. 80 samples of C. albicans were isolated from the vagina and after identification, the anticandidal effects of ziziphora tenuir extracts and essential oil on the planktoknectomy clinical isolates for the minimum inhibitory concentration (MIC) and minimum fungicidal concentration (MFC) with serial dilution methods and Disc diffusion was studied. Data were analyzed by t-test

**Results:** In this experimental study using disc diffusion and micro broth dilution assays. Z. tenuir essential oils had an IZ diameter of 21.05 mm. The MIC and MFC values for Z. tenuir essential oil were in the ranges of 4-16 and 8-16, with means MIC and MFC values of 6±3.58 and 10 ± 3.48 µl/ml. Ziziphora tenuir essential oil had an IZ diameter of 21.05 mm in comparison with amphotericin B 22 mm

**Conclusion:** The Ziziphora tenuir essential oil is an effective natural anticandidal agent compared to amphotericin B that shows effective promise as a therapeutic agent for the treatment of vaginal candidiasis. Due to the uniformity of the diameter of the positive control IZ with the Ziziphora tenuir essential oil, in cases that resist to chemical drugs usage herbal drug replacement can be suggested

**Keywords:** Candida albicans, Ziziphora tenuir, Hydroalcoholic Extracts, Essential Oils

# O19 - 871: INVESTIGATING OF LEVOPHLOXACIN RESISTANCE GENOTYPES IN HELICOBACTER PYLORI STRAINS ISOLATED FROM PATIENTS REFERRING TO IMAM REZA HOSPITAL IN 2012

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**Background and Aim:** Helicobacter pylori is the etiologic agent of chronic gastritis and is strongly associated with peptic ulcers and gastric cancer. the purpose of this study is to investigate the resistance of various genotypes of cultured H. pylori from biopsy samples of the patients which are also resistant to levofloxacin.

**Methods:** the resistance of 55 cases of H. pylori separated from cultivation through disc diffusion method to quinolone was studied. then PCR test based on the gyrA gene sequence was carried out in order to determine the existence of resistant genes to quinolone and then the products were purified through specialized kits and then sent to the specialized companies to determine the sequence

**Results:** From 120 patients 55 samples of H. pylori were separated by caltivation method. Through disc diffusion method 13(23.63%) of the cases showed resistance to quinolone. After determining the sequences 13 (23.63%) of the cases showed mutation in gyrA gene. Therefore, the frequency of mutation in the present research were 14 cases which include: 5(32.72%) mutation in Asp 91 ,2(14.28%) cases of mutation in Asn87,5(35.72%)cases of mutation in Asp148,1(7.14%)cases in E142 and 1(7.14%)cases in I152

**Conclusion:** Since there is a significant relationship between the species resistant to quinolone and mutation occurring in gyrA gene of H. pylori. also the inadequacy of helicobacter pylori standard treatment and the necessity to replace diets on the basis of fluoroquinolones we can conclude that studying the prevalence and molecular resistance mechanism of H. pylori can help identifying the individuals

**Keywords:** Helicobacter pylori, quinolones, gyrA

# O20 - 1090: THE ROLE OF MEXAB-OPRM AND MEXXY-OPRM EFFLUX PUMPS AND CLASS 1 INTEGRONS IN ANTIBIOTIC RESISTANCE OF PSEUDOMONAS AERUGINOSA IN BURN AND ICU ISOLATES

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**Background and Aim:** The present study evaluated the role of MexAB-OprM and MexXY-OprM efflux pumps and class 1 integrons in resistance to antibiotics in burn and Intensive Care Unit (ICU) isolates of Pseudomonas aeruginosa.

**Methods:** Fifteen burn and forty-two ICU isolates were obtained from four hospitals in Northwest Iran. The isolates were identified and evaluated by the disk diffusion and agar dilution methods for determining antibiotic resistances. The presence of class 1 integrons and associated resistance gene cassettes were detected by PCR and sequencing of the products. The expression levels of efflux pumps were evaluated by phenotypic and genotypic (Quantitative Real-time PCR) methods. The isolates were genotyped by Random Amplified Polymorphic DNA Typing (RAPD-PCR).

**Results:** All burn isolates were integron positive and Multi-drug resistant (MDR), while 78.5% and 69% of ICU isolates were found as MDR and integron positive, respectively. The aadB gene was the most prevalent gene cassette (63.6%) followed by aacA4 (47.7%). Thirty-nine (68.4%) and 43 (75.4%) isolates exhibited an overexpression of MexAB-OprM and MexXY-OprM. Among burn isolates, 80% and 86.6% of them were mexB and mexY overexpressed, while 64.2% and 71.4% of ICU isolates exhibited mexB and mexY overexpression, correspondingly. The isolates were genotyped as 24 different RAPD profiles and were grouped into 15 clusters.

**Conclusion:** Class 1 integron had a more significant role than efflux pumps in resistance to beta-lactams and aminoglycosides in burn and ICUs except for gentamicin in burn isolates. Based on our data, efflux pumps were not the main cause of high-level resistance to antibiotics.

**Keywords:** Pseudomonas aeruginosa, MexAB-OprM and MexXY-OprM efflux pumps, class 1 integrons, antibiotic resistance

**Applied Microbiology (Microbial Biotechnology- Industerial Microbiology-The Environmental Microbiology, Water and Wastewater)**

## O21 - 166: ISOLATION AND SCREENING OF CRUDE OIL DEGRADING YEASTS AND THE ABILITY OF THEIR MIXED-CULTURE IN OIL REMOVAL

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**Background and Aim:** The current study was made for isolation and screening the crude oil degrading yeast strains and ultimately for evaluating the ability of their mixed-culture.

**Methods:** Foremost, the isolation of yeast strains from contaminated soils was done and then the screening was accomplished qualitatively using Bushnell-Haas medium with 1% crude oil. Formerly, chosen strains were identified based on ITS gene. The ability of strains for oil degradation was proved by Total Petroleum Hydrocarbon (TPH) assay. Lastly, the proficiency of mixed-culture was measured under conditions similar to individual cultures and the result was compared with previous data.

**Results:** From the isolation procedure, 8 yeast strains were obtained, which 3 of them were chosen through screening in terms of growth. Identification of selected isolates, indicated that all of them were 3 species of Cryptococcus genus. TPH results from enriched cultures in complex medium showed 52.77%, 48.33% and 42.22% oil removal for Cryptococcus adeliensis, C. uzbekistanensis and C. aerius, respectively. In Bushnell-Haas minimal medium with 1% crude oil as carbon source, oil removal was decreased to 43.55, 42.43 and 36.34% for three Cryptococcus species, respectively. Minimal medium showed almost 10% drop in removal rate compared with complex medium. As well, reducing removal rate from 59.44% (enriched media) to 53.17% (minimal medium) for mixed-culture of three yeast strain. Totally, removal rates for mixed-cultures demonstrated nearly 10% increase compared to individual cultures.

**Conclusion:** According to our results, mixed-culture showed higher efficiency and this study can be used as the basis for large-scale experiments and more insight in crude oil remediation using mixed-culture of eukaryotic microorganisms.

**Keywords:** Crude oil, Mixed-culture, Yeast, Cryptococcus sp., Bioremoval

## O22 - 185: OCCURRENCE OF NOVEL YEASTS TAXA IN MANGROVE ECOSYSTEM OF IRAN

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**Background and Aim:** Mangrove wetland is a unique ecosystem and has rich bioresources. Iranian mangrove forests occur in the north part of the Persian Gulf and Oman Sea and Avicennia marina consider the dominant species.

**Methods:** In this study, healthy plant materials (A. marina) from Qeshm Island, Hormozgan Province, were used as sources for isolation of yeasts on Rose Bengal agar supplemented with 0.1 g/l chloramphenicol and incubated at 25 °C for 48 hours. Representatives of each morphotype were purified on yeast peptone glucose (YPG) agar medium at 25 °C for 48 hours. The polyphasic identification strategy including determination of morphological, physiological and biochemical characteristics of the isolates according to the standard methods were used. Molecular markers including 26S rRNA gene (D1/D2 domains) and ITS region sequences were used for phylogenetic analysis.

**Results:** Microbial community in mangrove ecosystem has been intensively studied and exploited in recent years and it has been found that it is mainly composed of bacteria, fungi and actinomyces. Major yeasts and yeast-like genera isolated in this study were: Sympodiomycopsis, Hortaea, Quambalaria, Aureobasidium and Jaminaea sp. We also found two strains belonged to the undescribed species of Aureobasidium sp. and Jaminaea sp., respectively. Therefore, the name Jaminiaea pallidilutea sp. nov. with IBRC-M 30284T(ex-type) and Aureobasidium mangrovum sp. nov. IBRC-M 30265T (ex-type) proposed to accommodate these novel strains.

**Conclusion:** The results show that the mangrove ecosystems are a great source for isolation of novel taxa of microorganisms that some of them may have potential for biotechnological applications.

**Keywords:** Yeast diversity, Mangrove ecosystems, Undescribed yeasts, Iran

# O23 - 237: CODON OPTIMIZATION AND MODIFICATION OF CA GENE FROM CAMINIBACTER MEDIATLANTICUS FOR THE PURPOSE OF INCREASED EXPRESSION IN RECOMBINANT E. COLI

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**Background and Aim:** One of the most abundant of the greenhouse gases is carbon dioxide and it creates environmental problems. An enzyme based approach using Carbonic anhydrase to catalyze the conversion of CO2 to bicarbonate at a high rate overcomes the environmental issues in relation to CO2 capture.

**Methods:** Following analysis of CA gene from Caminibacter mediatlanticus, its coding frame was optimized based on the commonly prevalent codons used by E. coli cells. By changing the nucleotide sequence witho ut any amino acid alteration, several restriction enzyme recognition sites within coding region of the gene were omitted. Also suitable RE sites for gene cloning were added in both sites of gene fragment and nine amino acid expression codons were inserted into 5' site of the gene fragment for stability and functionality of resulted heat-stable Carbonic anhydrase.

**Results:** With regards to the fact that gene optimization was based on the codon preference of the host, it is predicted that this codon optimization can lead to increased stabilization as well as expression of the recombinant CA gene in E. coli cells. The modified oligonucleotide sequence was cloned in the cloning vector and transformed into competent cells that was prepared from E. coli XLI-Blue. Insertion of this fragment was confirmed by using PCR and enzyme digestion.

**Conclusion:** Because of thermostable positive properties of this enzyme for industry, the preparation of this recombinant bacterium could efficiently be used towards production of Carbonic anhydrase with enhanced properties. The recombinant expressed protein could potentially be used for to reduce emissions of carbon dioxide in environment.

**Keywords:** Caminibacter mediatlanticus, Carbonic anhydrase, Codon optimization

# O24 - 278: EVALUATION OF PYRENE BIODEGRADATION BY BACILLUS SUBTILIS HG-01 AND ITS MIXED-CULTURES WITH PSEUDOMONAS AERUGINOSA PTCC 1074 AND P. PUTIDA PTCC 1694

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**Background and Aim:** Pyrene is a model Polycyclic Aromatic Hydrocarbons (PAHs) with high molecular weight. The current study evaluated the pyrene degradation ability of Bacillus subtilis and its activity with combination by Pseudomonas aeruginosa (as a biosurfactant producer) and P. putida (as a PAHs degrading model).

**Methods:** Bacterial strains isolated from a contaminated soil and identified by 16s rRNA gene amplification and sequencing. The crude oil removal was measured by Total Petroleum Hydrocarbon (TPH) assay. For pyrene degradation, Bushnell-Haas minimal medium containing 500 ppm pyrene was used and pyrene degradation was monitored by Gas Chromatography (GC). The proficiency of pyrene and oil degradation of binary and ternary mixed-culture was evaluated for the selected isolate in combination with P. aeruginosa and P. putida under similar condition.

**Results:** The bacterial isolate HG-01 showed the best results in TPH assay and pyrene degradation test. Molecular identification of HG-01 indicated that this isolated was Bacillus subtilis with 100% similarity. The individual culture of Bacillus subtilis could degrade 50.4569% and 46.547% of crude oil and pyrene in 21 days. The binary mixed-culture (B. subtilis and P. aeruginosa) and (B. subtilis and P. putida) and ternary mix-culture raised the amount of pyrene biodegradation to 51.478%, 57.650% and 63.479%. Our study demonstrated that ternary mixed-culture of bacteria could increase the degradation rate about 50% compared to individual culture and synergistic effect of mix-culture could improve the toxic compounds degradation.

**Conclusion:** Based on the results, it could be indicated that mixed-culture of different microorganism could be efficient selection for bioaugmentation of toxic PAHs degradation.

**Keywords:** pyrene, mixedculture, Bacillus subtilis, Pseudomonas aeruginosa, Pseudomonas putida

# O25 - 781: DEGRADATION OF POLYESTER-POLYETHER URETHANES BY NEWLY ISOLATED BLACK YEAST EXOPHIALA SP. H16

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**Background and Aim:** Polyurethane (PU) is a common synthetic polymer used in a wide variety of industrial fields. This polymer is one of the most resistant plastics to biodegradation which accumulate in environment for decades and it becomes the major concern of environmental pollution. This study focused on ability and characterization of an indigenous isolated yeast strain to degrade polyurethane as a sole carbon source.

**Methods:** The biodegradation of PU film pieces was evidenced through qualitative and quantitative methods including measurement of PU degradation related enzymes such as lipase, protease and urease, FT-IR spectroscopy and scanning electron microscopy (SEM).

**Results:** The superior strain was identified as Exophiala sp. H16 with 99% homology in ITS gene. Exophiala sp. H16 profile enzyme assay indicated that this strain was capable to produce candidate polyurethane degrading enzymes such as lipase and urease but not protease. SEM and FT-IR spectroscopy exhibited specified changes on the surface of PU film and establishment of some new by-products after polymer dissociation, respectively. An increase in organic acid functionality and therefore decrease in ester functional group was observed through FT-IR. Also, 12% decrease in height adjustment of carbonyl peak at 1730 cm-1 was ascribed to degradation of PU films. The bands at 3300-3700 cm-1 displayed increase in releasing free amine and alcohol functional groups which observed through extension and height of the peaks. Surface changes in polyurethane films caused by biofilm formation with some holes was attained via SEM.

**Conclusion:** It is concluded that Exophiala sp. H16 isolated from oil sludge has high ability to degrade polyurethanes.

**Keywords:** Biodegradation, Exophiala sp. H16, FT-IR, Polyurethane

# O26 - 952: OVERPRODUCTION OF ERYTHROMYCIN BY ERME GENE MUTAGENESIS AND EXPRESSION IN SACCHAROPOLYSPORA ERYTHRAEA

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**Background and Aim:** Classical and recombinant strain improvement such as application of UV-mutagenesis and selection of overproduction mutant are the most important and convenient method in enhancement of antibiotic production.

**Methods:** In the present study, Saccharopolyspora erythraea was mutagenized using UV lights and selection by tylosin resistance mutant to improve yield of erythromycin. In other sides, to improve the erythromycin yield in mutant, effects of various parameters such as carbon concentration and ermE gene expression were analyzed.

**Results:** In primary selection, high erythromycin producing strains were isolated by plaque agar and increase of 87% was observed in tylosin resistance mutant when compared to wild type strain. In secondary selection, a mutant strain (RHU233) with a production of 1.39 mg erythromycin per ml was isolated in fermentation process, which was 20 times more productive than the wild type. In other hand it was found that glycerol can be used as an alternate carbon source in enhancement of erythromycin production. Comparison of ermE gene expression in mutants RHU233 and wild type in Escherichia coli detected in accumulation of soluble hexahistidine-ErmE up to 45% of total cell protein after 18 h in mutants RHU233. Metal-chelation chromatography yielded 126 mg of hexahistidine-ErmE per liter of culture with a purity slightly greater than 95% in mutants RHU233.

**Conclusion:** Finally, these optimized conditions could be used for the commercial production of this unique antibiotic.

**Keywords:** erythromycin, ermE gene, Saccharopolyspora erythraea

# O27 - 954: STUDY ON ANTAGONISTIC EFFECT OF ENDOPHYTIC BACTERIA AGAINST ERWINIA CARATOVORA

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**Background and Aim:** Recently, potential role of endophytic bacteria in control of phytopathogens has been demonstrated. In our country, Iran, few studies have been done about the role of these bacteria in controlling plant bacterial pathogens. Therefore, the aim of this study was to isolate and identify endophytic bacteria with antagonistic activity against Erwinia caratovora

**Methods:** Root and leaf samples of potato were collected from fields located in vicinity of Gorgan, Golestan, Iran. The samples were disinfected by ethanol and sodium hypochlorite, rinsed three times with sterile distilled water (SDW). After cutting roots and leaves into small fragments in SDW, a loopful of the resulting suspension was streaked on nutrient agar and incubated at 26°C for 3 days. All colonies were distinguished based on their morphology and purified. Finally, the ability of the isolates to produce diffusible metabolites was tested according to the agar well diffusion assay.

**Results:** Bacterial strains isolated from the samples were identified as follow: Bacillus nealsonii, Bacillus muralis, Brevibacillus laterosporus, Solibacillus silvestris, Bacillus lentus, Paenibacillus macquariensis and Bacillus firmus. The inhibitory effect of these isolates was evaluated against Erwinia caratovora and revealed that only the first three strains were able to inhibit Erwinia caratovora growth in agar well diffusion assay.

**Conclusion:** Based on the result of this study, these isolates are promising organisms for the control of plant diseases caused by Erwinia caratovora. However, further studies required to determine potential application of these isolates in biological control.

**Keywords:** Antagonistic effect, Erwinia caratovora, Endophyte, potato

# O28 - 958: ISOLATION OF BISPHENOL-A BIODEGRADING BACTERIA FROM SOIL OF GARBAGE DEPOT LOCATION IN TONEKABON

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**Background and Aim:** Bisphenol-A (C15H16O2) as an organic material is used in manufacture of epoxy resins, polycarbonates and Polysulfones in industry. This toxic compound interferes with the functioning of the endocrine glands and the development of living organisms. The garbage depot site is one of the places where bisphenol-A penetrates into the soil through leachate and contaminates soil, groundwater and surface water.

**Methods:** In this research, 50 soil samples impregnated with leachate were collected from garbage depot location. Samples are cultivated in basal salt medium containing 100 ppm of bisphenol-A as sole carbon source with pH=7.2, and incubated at 30°C in shaker incubator for 24 h and then subcultured in in Luria-Bertani agar (LB) medium and incubated at 30°C for 24 h to isolate individual bacterial colonies.

**Results:** Bacterial colonies were evaluated differentially based on culture, staining, and biochemical properties and isolates were recognized with molecular method (PCR) by amplification of 16s ribosomal RNA and Two bacteria such as pseudomonas putida and Borkholderia senocepacia were isolated

**Conclusion:** Non biologic degradation of Bisphenol-A occurs through photochemical processes and its biodegradation is carrying out with the activities of some microorganism in high efficiency. Bisphenol-A is toxic for microorganism but pseudomonas putida can well biodegrade it.

**Keywords:** Bisphenol-A, Garbage, Degrading bacteria

# O29 - 971: EVALUATION OF FUNGAL CONTAMINATION, CASE STUDY OF MAJLESI'S BUS STATION- ESFAHAN

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**Background and Aim:** Airborne biological contaminants or bioaerosols are a globally challenge for public health. Many studies shown the high concentration of bioaerosols such as fungi that lead to respiratory problems and allergic reactions among people. Fungi are isolated from indoor and outdoor contamination frequently which are very durable in stress conditions. During the present study, the variety and population of airborne fungi were evaluated in bus terminal of Majlesi. This terminal is placed under Imam Ali square in Isfahan and near overcrowd streets. In one side, ventilation rate and sunlight isn't enough and on the other side, high concentration of CO2, particulate matter (PM) and humidity increase the population of fungi.

**Methods:** Air sampling is done during 5 working days (Sat- Thu), twice a day (morning and evening), with SKC sampling pump with 10 lit/min, 2 hours each time for three months from April to June 2017. The samples were transferred on Sabouraud Dextrose Agar (SDA) media containing 50 µg/mL kanamycin and then incubated at 25ºC for 3-5 days.

**Results:** The growth fungi were identified and their concentration was determined. The results revealed the Penicillium sp and Cladosporium sp were the highest population and other fungi such as Asperjillus sp, Alternaria sp and Fusarium sp also were isolated and their concentration were varied at the range of 45-950 CFU/m3/hr.

**Conclusion:** The results concluded that environmental factors such as humidity and temperature as well as geographical location are effective on fungi population.

**Keywords:** Fungi- Bioaerosols- Majlesi Terminal- Isfahan-Air contamination

# O30 - 978: ISOLATION AND MOLECULAR IDENTIFICATION OF CAROTENOID-PRODUCING BACTERIA

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**Background and Aim:** The production of pigment from bacteria is very important due to low cost of production, more product and easy to extract rather than other sources. Carotenoids are widely used in food additives and antioxidants, in addition to being used vitamin A precursor, to increase antibody production in vitro, anti-tumor agents, and to prevent cardiovascular disease. The aim of the present study was to isolate and molecular identify carotenoid-producing bacteria from different regions of Tehran.

**Methods:** Twenty soil samples were collected from different regions of Tehran. After serial dilution, each sample was cultured on BHI agar medium and incubated at 37°C. Pigment producing bacteria were selected for further identification and their pigment extraction was done by methanol. The screening is carried out at two levels: i) selection of strains by visual color inspection, ii) the analysis of the pigment extracts by UV-VIS spectroscopy and confirmation by high-performance liquid chromatography (HPLC). The isolates were identified by phenotypic methods and their 16S rRNA gene was amplified by the PCR method for genotypic identification.

**Results:** Staphylococcus epidermidis, Micrococcus aloeverae, Citricoccus alkalitolerans, Rhodococcus zopfii, Arthrobacter agilis, Dietzia natronolimnaea and Rhodococcus ruber were identified as carotenoids producing strains. The highest rate of absorption was observed using UV-VIS analysis in Staphylococcus epidermidis and Dietzia natronolimnaea. HPLC analysis showed that the produced carotenoids are beta-carotene in comparison with the standard-carotene curve.

**Conclusion:** Microorganisms are the potential source in the production of colorants. In our study, we introduced two genera of bacteria (Staphylococcus epidermidis and Dietzia natronolimnaea) in effective production of carotenoid.

**Keywords:** β-carotene, Carotenoids, HPLC, Pigment, UV-VIS

# O31 - 983: BIODESULFURIZATION OF DIBENZOTHIOPHENE WITH ENTROBACTER BAB3164 ISOLATED FROM OIL CONTAMINATED SOIL IN ABADAN RIFINERY

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**Background and Aim:** Combustion of fuels containing sulfur, leading to the formation of pollutants such as CO2 and create acid rain, destruction of farmland and damage to the building facades. Since existing methods for desulfurization of fuels, such as hydrogen desulfurization, has disadvantage, for several years, the best method is to use biological methods. Desulfurization biological advantage over the hydrodesulfurization of sulfur compounds such as dibenzothiophene, benzothiophene is being less expensive, less production of hydrogen and carbon dioxide and doing this at ambient temperature and normal pressure. Given that the refinery had not been used extensively suitable desulfurization of isolated bacteria in this article, the bacteria in soil bacteria isolated parts of the refinery for good desulfurization was investigated.

**Methods:** 3 soil samples from different areas of study refinery were collected. After specimen inoculation, growing bacteria, microbial and biochemical tests were identified. Bacteria capable of metabolizing Benzothiophene isolated, and types of able to remove sulfur dioxide, Benzothiophene, by using of growth model and test Gibbs was screened. And 16S rRNA-PCR techniques were used to confirm the strains obtained.

**Results:** From 3 samples 1bacteria were isolated and between them 6 isolated are importance due to ability of desulfurization. In this bacteria indigenous in order to Entrobacter species was categorized.

**Conclusion:** In this bacteria indigenous in order to Entrobacter specie was categorized.

**Keywords:** biological desulfurization, Debenzothiophene, Entrobacter sp. BAB-3164

# O32 - 1150: COMPARISON OF THE ANTIBACTERIAL EFFECTIVENESS BETWEEN WHOLE EXTRACTS AND ITS DERIVED FRACTIONS FROM THE CULTIVATED BUTTON MUSHROOM, AGARICUS BISPORUS

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**Background and Aim:** So far, limited antibacterial compounds from the cultivated button mushroom have been identified, including linoleic acid, a peptide of 22,500 Dalton, linoleic acid, and 2,4-dihydroxybenzoic and protocatechuic acids. Also, very little is known about how antibacterial compounds synergistically interact in a mushroom whole extract.

**Methods:** The present study sought to address this issue using a colorimetric micro-dilution towards 10 bacterial species. The extraction was done by maceration in DCM- MeOH (1:1), followed by silica gel chromatography. One fraction was further separated using high performance liquid chromatography (RP-HPLC).

**Results:** The extract considerably reduced the growth of Gram-positive bacteria particularly Staphylococcus aureus by 50% at concentrations less than 0.18 mg/mL, although it was inactive against antibiotic-resistant or Gram-negative strains. Of 200 fractions obtained through step-wise gradient elution, the EtOAc/MeOH fraction displayed activity and inhibited both Gram-positive and E. coli at concentrations above 5 mg/mL. Further, the only active HPLC-sub-fraction prevented the bacterial growth at concentrations even higher than did the fraction, although its inhibitory effects were observed against all the tested bacteria particularly Pseudomonas aeruginosa ($p < 0.05$).

**Conclusion:** The stronger antibacterial activities in the extract could be attributed to synergism among its components, suggesting that a low intake of the whole mushroom would possess significant antibacterial activities. On the contrary, the HPLC-derived sub-fraction showed a broader spectrum of action compared to the extract. The bactericidal activities of this compound against P. aeruginosa may promisingly warrant further investigations in combination with commercial antibiotics.

**Keywords:** Agaricus bisporus, antiviral activity, HPLC, synergism, spectrum of action

Detection and Typing of Microorganisms

# O33 - 10: DIAGNOSTIC VALUE OF SEROLOGICAL AND MOLECULAR METHODS FOR SCREENING AND DETECTING CHLAMYDIA TRACHOMATIS INFECTION IN SEMEN SAMPLES OF INFERTILE MEN REFERRING TO ROYAN INSTITUTE

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**Background and Aim:** Chlamydia trachomatis(CT) with damaging effects on sperm quality parameters can often cause infertility in men. The main objective of this study was to determine the diagnostic value of serological and molecular methods in screening and detecting CT infection in semen samples of infertile men referring to Royan Institute.

**Methods:** In this cross-sectional study, 465 patients referring to the clinical laboratory of Royan Institute were randomly chosen for primary screening and detection of the presence of CT. 93 samples were normozoospermia (Asymptomatic) and other 372 had abnormal parameters (Symptomatic) in semen analysis. ELISA test was performed as the screening test. Samples with OD>0.200 were selected as the case group and asymptomatic samples with OD<0.200 were selected as the control group for confirmatory test. PCR assay was used to confirm the serological results.

**Results:** In the case groups (n=62), 4 out of 32 symptomatic samples (12.5%), and 1 out of 30 asymptomatic samples (3.3%) revealed positive results in the PCR. No PCR positive sample was observed in the control group (n=34). The final results revealed that considering OD>0.400 as the ELISA Positive, the Diagnostic value of CT-ELISA Positive in symptomatic and asymptomatic infertile patients were 0.019(7 of 372) and 0.021(2 of 93), respectively.

**Conclusion:** Screening of infertile men who do not show any clinical symptoms look unavoidable and can be considered as a part of the program of sexually transmitted disease control. In conclusion the anti-CT IgA ELISA test could be introduced as an appropriate tool for screening purpose in the seminal plasma.

**Keywords:** Chlamydia trachomatis, Infertile Men, ELISA, PCR, Screening

# O34 - 54: DIAGNOSE OF MYCOBACTERIUM BOVIS FROM TUBERCULOSIS PATIENTS IN ANIMALS VACCINETOR OF MAHABAD AND BOKAN PROVINCE (2016)

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**Background and Aim:** Tuberculosis (TB) is amongst the common infectious diseases in the world so that the World Health Organization (WHO) has declared it as a global emergency as well as an extremely contagious disease.

**Methods:** In this study, 48 positive samples were collected from center of pulmonary diseases and tuberculosis in Mahabad and Bokan Province during 2016 and were grown on Lowenstein-Jensen medium (LJP and LJG)

**Results:** A total of 48 isolates were obtained which were identified as genus Mycobacterium belonging to Mycobacterium tuberculosis complex. 43of the isolates were Mycobacterium tuberculosis while 5 isolates were identified as M. bovis. Conclusion: The results of the study

**Conclusion:** The results of the study indicates that M. bovis species is present among the human TB cases in Mahabad and Bokan province, which indicates the zoonotic potential of the species and the possible transmission of the species from animals to humans.

**Keywords:** Mycobacterium tuberculosis complex, Mycobacterium bovis, Mycobacterium tuberculosis,

# O35 - 58: IDENTIFICATION OF RAPIDLY GROWING MYCOBACTERIA BY MULTI LOCUS SEQUENCE ANALYSIS

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**Background and Aim:** Rapidly growing mycobacteria (RGM) are increasingly recognized as a cause of human infections. Rapid and reliable identification of RGM at species level should be carried out as a means of effective patient managements.

**Methods:** Twenty clinical samples of RGM isolated from suspected tuberculosis (TB) patients were included. Different phenotypic tests and hsp65-PCR restriction analysis (PRA) method were used to identify the isolated organisms to species level. Sequence analysis of rpoB gene was also used for molecular identification of clinical isolates. Multi locus sequence analysis (MLSA) based on 16S rRNA, rpoB, hsp65 and ITS locus were used to confirm the results.

**Results:** Phenotypic evaluation of clinical isolates assigned 19 (95%) isolates of RGM to M. fortuitum complex. Using hsp65-PRA, 13 isolates of M. fortuitum complex were identified as M. fortuitum, 4 isolates as M. abscessus and 1 isolates as M. chelonae. By MLSA, all species studied were readily discriminated from each other.

**Conclusion:** MLSA has a high discriminatory power which easily permits the identification of clinical isolates of RGM to the species level. It unambiguously differentiates between closely related species with restricted biochemical and PRA differences. This procedure is suggested as a first-line identification method for RGM.

**Keywords:** Rapidly growing mycobacteria, Multi locus sequence analysis, Iran

# O36 - 108: DISTRIBUTION OF NON-TUBERCULOUS MYCOBACTERIA ISOLATED FROM CLINICAL SPECIMENS AND IDENTIFIED BY PCR-SEQUENCING METHOD IN WEST OF IRAN

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**Background and Aim:** Infections by NTM has rapidly increased in recent years, due to high infection rates related to the populations at risk like immunocompromised individuals, patients predisposed by prior Pulmonary or malignancy. According to importance of diseases caused by Non-tuberculous Mycobacteria (NTM) worldwide, the main aim of this study was access genetic diversity of NTM clinical isolates using 16S rRNA and rpoB sequence analysis.

**Methods:** The total 37 diverse isolates of NTM were collected from sputum in two years between 2013 and 2014 by using standard decontamination procedure. All mycobacterial isolates were grown on LJ medium and also traditional methods for identification of mycobacteria rely on traits and then DNA extraction and PCR was performed and products were sent to sequencing.

**Results:** A total of 45 isolates collected, 37 samples (83%) were evaluated as non-tuberculous mycobacteria. By sequencing 16S rRNA and rpoB gene, 12 different species have been identified which sequencing of rpoB was able to identify all species but 16S rRNA sequencing was incapable of recognizing some species. The major species obtained were Mycobacterium simiae (22%), M. fortuitum (19%) and M. abscessus (13%).

**Conclusion:** We conclude that 16S rRNA gene sequencing combination with rpoB marker is a more prejudicial identification method. The presence of various species in a clinical sample in Iran emphasizes the use of molecular method like sequence analysis of genes for reliable identification. By reducing the detection time and accurate identification of NTM can be effective in the control and surveillance of the disease.

**Keywords:** Non-tuberculous mycobacteria, rapidly growing mycobacteria, sequence analysis, clinical samples, Identification

# O37 - 256: RAPID AND SENSITIVE DETECTION OF COXSACKIE VIRUS B3 BY RT-LAMP ASSAY: OPTIMIZATION BY TAGUCHI EXPERIMENTAL DESIGN

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**Background and Aim:** Coxsackievirus B3 (CVB3) is an important pathogenic virus in viral myocarditis, which accounts for more than fifty percent of viral myocarditis cases. Sensitive and fast diagnosis methods for identification of CVB3 is an essential prerequisite for controlling spread of viral myocarditis caused by CVB3. The RT-LAMP is rapid, sensitive and inexpensive technique for molecular detection of pathogenic agent. In this study we optimization one tube and two tube RT-LAMP assay by Taguchi experimental design.

**Methods:** The Qualitek-4 software was used to design of Taguchi experiments and describe number of experimental situations. The optimization of one tube and two tube revers transcription loop-mediated isothermal amplification (RT-LAMP) reaction in 9 trials with different conditions design with three variables factors include of MgSO4 concentration, temperature and time of incubation.

**Results:** The RT-LAMP reaction mix was optimized and positive result for two tube RT-LAMP observed at 2mM MgSO4 and 63 °C for 40 min incubation, 4mM MgSO4 and 63 °C for 60 min incubation and 4mM MgSO4 and 65 °C for 20 min incubation. Also for one tube RT-LAMP reaction, positive result observed at 4mM MgSO4 and 60 °C for 90 min incubation.

**Conclusion:** The RT-LAMP method can be used as a molecular diagnostic test for detection of CVB3 in clinical samples. Advantages of this method are amplification takes place under a constant temperature, therefor it does not require thermal cycler, and also amplification in RT-LAMP is more specific because four primers design that recognizes six specific regions on the target gene.

**Keywords:** CVB3, RT-LAMP, Myocarditis, Taguchi experiments

# O38 - 337: DISTRIBUTION OF HUMAN PAPILLOMAVIRUS TYPE 16 E7 SEQUENCE VARIATIONS ISOLATES FROM WOMEN WITH CERVICAL CANCER IN TEHRAN, IRAN

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**Background and Aim:** Cervical cancer is the second most frequent cancer worldwide. Human papillomavirus (HPV) type 16 is high risk type commonly associated with malignancies. This study aimed to investigate the sequence variation of HPV-16 E7 genomic regions from Iranian infected women.

**Methods:** 166 cervical specimens from Iranian women suffering from cervical carcinoma were collected. DNA extracted from the tissues was used as a template for the PCR and INNO-LiPA assay. Cloning of a complete ORF of the E7 gene, and sequencing were carried out in order to investigate the sequence alteration.

**Results:** Out of 163 HPV positive samples, 48.46% (79/163) were found to be HPV type 16. The most frequently detected variant was C196T (72.39%) in E7 which led to an amino acid change of R66W. In addition, only one common variant T234G was recognized, but it did not lead to any amino acid modification. We also identified nucleotide variations A86G (10.42 %), and C188T (57.66 %) in samples.

**Conclusion:** This study declared for the first time, the genetic variations of HPV 16 E7 in IRAN. Our results show that HPV 16 was the most common High-risk subtypes in cervical cancer patients. Present results suggesting that these amino acid alterations in HPV 16 E7 variants could be important in vaccine development against HPV infection.

**Keywords:** Human papillomaviruses, HPV 16, sequence, variation, E7 gene

## O39 - 457: MECHANISM OF TRANSMISSION IN MULTIDRUG-RESISTANT TUBERCULOSIS IN NORTHWEST OF IRAN

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**Background and Aim:** Tuberculosis is the leading cause of death in adults from a single infectious agent, killing about 3 million people every year. One-third of the human population is thought to be infected by the causative agent Mycobacterium tuberculosis. Multidrug resistance isolates are one of the most important concerns in tuberculosis control. In this study, we used MIRU-VNTR to determine MDR-TB transmission in Tabriz.

**Methods:** A hundred and twenty M. tuberculosis isolates were collected from patients who referred to TB center of Tabriz and characterized for drug resistance and typing by MIRU-VNTR method.

**Results:** Thirty percent of the isolates were resistant to at least one drug. Among Iranian isolates only two isolates (1.9%) were MDR and in patients from the Republic of Azerbaijan four isolates (28.6%) were MDR. By MIRU-VNTR typing eighty-eight distinct profiles were identified, including 20 clustered profiles and 68 unique patterns and fifty-two isolates (43.3%) included in clusters.

**Conclusion:** The minimum estimate of the proportion of tuberculosis transmission in East Azerbaijan with MIRU-VNTR was 26.7% and 14% of MDR isolates acquired infections recently. Results of the present study showed that high percent of TB cases are sensitive to antibiotics. MIRU-VNTR typing showed a limited number of MDR- TB transmission in our isolates set. Because of the increasing number of patients referred from Rep. of Azerbaijan with MDR-TB, we need more stewardship and controlling programs for these patients for preventing the outbreak of MDR-TB in our region.

**Keywords:** Tuberculosis, MDR-TB, Limit, Transmission, Cluster, Resistance.

# O40 - 485: ANTIBIOTIC SUSCEPTIBILITY PATTERNS AND PCR-RFLP ANALYSIS OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS CCRB GENE ISOLATED FROM CLINICAL SAMPLES IN SHIRAZ, SOUTHWEST OF IRAN

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**Background and Aim:** Methicillin-resistant Staphylococcus aureus (MRSA) is still known as a major agent of nosocomial. The aim of this study was to detect the SCCmec types of MRSA clinical isolates, using polymerase chain reaction and restriction fragment length polymorphism (PCR-RFLP) analysis, based on ccrB gene region. Antimicrobial susceptibility test and any association between SCCmec types and different clinical isolates were also studied

**Methods:** In this cross sectional study, 183 MRSA isolates were included. The isolates were collected from different clinical samples of hospitalized patients in Shiraz Medical University affiliated hospital, Shiraz, Iran. MRSA isolates were detected using oxicillin agar screening plate and PCR amplification of mecA gene. PCR-RFLP analysis was employed to identify the SCCmec types, based on ccrB gene. Antimicrobial susceptibility to 21 different antibiotics was determined by disk diffusion agar plate. Mupirocin resistant MRSA isolates were detected by phenotype and genotype assays.

**Results:** SCCmec type III was predominant (70%), followed by type I (24%), type IV (2.7%), and 3.3% were untypeable. A significant association between pneumonia and SCCmec types I and III was observed, ($P=0.001$ and $P=0.007$, respectively). Septicemia, also, was significantly associated with SCCmec type III ($P<0.001$) and type IV ($P=0.025$). All MRSA isolates were sensitive to vancomycin, chloramphenicol, daptomycin, linezolid and teicoplanin. Two MRSA isolates (SCCmec type III) resistant to mupirocin were detected in the urine and wound specimens.

**Conclusion:** Based on ccrB gene analysis by PCR-RFLP, three SCCmec types of MRSA were found in the clinical samples. SCCmec type II was not detected in any sample. SCCmec type III was predominant in the patients with pneumonia and septicemia

**Keywords:** Methicillin-resistant Staphylococcus aureus, genotyping, polymerase chain reaction, restriction fragment length polymorphism

# O41 - 544: EXPRESSION OPTIMIZATION OF MENTHONE-MENTHOL REDUCTASE (MMR) ENZYME FROM PEPPERMINT IN ESCHERICHIA COLI HOST STRAIN

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**Background and Aim:** The essential oil of peppermint (Mentha piperita) is synthesized and accumulated in specialized anatomical structures called peltate glandular trichomes. Menthol biosynthesis pathway contain several steps that each step is catalyzed by a special enzyme. The aim of this work was expression and characterization of menthone-menthol reductase (MMR) enzyme in E. coli host cells. This enzyme catalyzes the last step of menthol biosynthesis pathway, in Mentha piperita plant.

**Methods:** A construct having codon optimized sequence of this enzyme was prepared by a Japanese research group in such a way being suitable for expression in prokaryotic cells. Transformation to Escherichia coli BL21 (DE3) was performed via CaCl2 method. Induction and incubation of transformed cells was done in different conditions.

**Results:** SDS-PAGE analysis was performed for evaluation of expressed protein and could help us to choose proper condition of induction. Analysis of expressed MMR was carried out using MALDI-TOF/TOF after in-gel digestion. And purification of desired recombinant enzyme is being done in our laboratory.

**Conclusion:** Results showed that E. coli Bl21 (DE3) is a suitable host for expression of MMR enzyme, and the optimum IPTG concentration was 0.4 mM, and 30°C was the optimum temperature for MMR production in mentioned E. coli host strain.

**Keywords:** Expression, recombinant protein, E. coli

# O42 - 560: PREVALENCE OF CTX-M-15 TYPE OF BETA-LACTAMASE GENE IN ESCHERICHIA COLI BY PCR METHOD

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**Background and Aim:** Beta-lactamase enzymes are the most important resistance factors among Gram-negative bacteria to the beta-lactam group of antibiotics. This study was conducted to determine the prevalence of extended-spectrum beta-lactamases (ESBL) in Escherichia coli isolates using PCR method.

**Methods:** This descriptive – analytic study was conducted on 120 E. coli samples isolated in hospitals in Sari in northern Iran during 2013. Antibiogram was conducted using combined disk method to determine the sample resistance. The presence of β- lactamase gene of CTX-M-15 in ESBL was assessed using PCR method.

**Results:** Out of 120 E. coli, 98 (81.6%), 15 (12.5%) and 7 (5.8%) bacteria isolated from urinary tract, blood and wound, respectively. Multiple drug resistance was seen in 98% of urine samples, 12.7% of blood samples and 3.6% of wound samples ($P<0.05$). 18.3% of multiple drug resistance samples were positive for CTX-M-15 β -lactamases resistance gene. The probable presence of CTX-M-15 were detected in blood sample (20%), urine sample and wounds (14.3%) ($P<0.05$).

**Conclusion:** Beta-lactamase enzymes were detected in high percent of E. coli isolated from urine samples.

**Keywords:** Spectrum ß-lactamases, Escherichia coli, CTX-M-15, Urinary tract

# O43 - 627: IDENTIFICATION AND INVESTIGATION OF DRUG-RESISTANT YEAST SPECIES ISOLATED FROM THE SKIN OF PATIENTS WITH ACNE CLINICAL PROTESTS REFERRED TO THE DERMATOLOGY CLINIC

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**Background and Aim:** Acne is a pathological disorder and a chronic inflammation in the Sebaceous follicles, and one of the most popular dermatology damages that has affected millions of people worldwide

**Methods:** In this study of 70 clinical specimens from suspected skin with acne protests were collected by sterile swab and were streaked on SDA containing chloramphenicol. The plates were incubated for 48 hours in 37 ˚C. Suspected colonies were studied through microscopic examination and subsequent passage in accordance with Mycology of standard procedures and specify the type of fungal colony color in CHROM agar for the isolation of the yeast. For final approval, Candida Sp. Sequencing Method (ITS2, ITS1regions) was performed, and susceptibility testing was performed to review Candida sp. for drug-resistant isolates based on CLSI method.

**Results:** Of 70 clinical isolates studied, 11species of Candida including C. parapsilosis 8 (72.73%), C. krusei 1(12.5%), C. lusitaniae 1(12.5%), C. kefir1(12.5%), and a Trichosporon asahi were identified and isolated. C. parapsilosis isolates susceptibility to various concentrations of the anti-fungal agents to isolate Cp1 study has shown that the isolated Cp8 Cp5 with MIC50 equal to32,0.5,0.25 and MIC90 of <64, <1, <0.5 µg/ml Fluconazole, Itraconazole and Ketoconazole were respectively resistant. Apart from the isolation of Cp1 and Cp8, which had relative strength, almost all other species of C. parapsilosis isolates were susceptible to these drugs.

**Conclusion:** As various studies have proven that in most cases bacterial agents are involved in causing acne, according to the results of this study, it can be suggested that the yeast Candida can be introduced as an agent in the etiology of this disease

**Keywords:** Acne Vulgaris, Candida, Antifungal Susceptibilities, Skin

# O44 - 637: MOLECULAR DETECTION OF ASPERGILLUS NIGER ISOLATED FROM EAR INFLAMMATORY

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**Background and Aim:** Aspergillus is the most common fungus that can be found in crops and various climates worldwide .This genus include 150 species can cause pathogenicity of human and animals, the most important pathogen in the genus is A. niger .It belongs to the family Trichocomacea and that molds can cause a variety of severe infections of the respiratory system, external auditory canal (otomycosis), nose, of human Aims and objectives: Aims of the current study were to review the impact of A. niger in otomycosis cases, and use the singleplex PCR technique as a rapid identification method for A. niger isolated from patients with clinically diagnosed of otomycosis.

**Methods:** In this study ear swabs from 50 patients by sterile cotton swabs and used for conventional methods include direct examination by using 10% KOH, culture on SDAC, macroscopic, microscopic characteristics of the colony and singleplex PCR technique as a molecular method was performed using primer pair targeted to the 16S rRNA gene of A. niger.

**Results:** The conventional methods include direct examination of the specimen, culture, morphological examination, microscopically examination of the culture by using cellophane tape method showed positive results in 12 (24%) out of 50 (100%) patient clinically diagnosed with otomycosis, whereas the singleplex PCR method detected positive results in 10 (83%) out of 12 (100%) samples that were positive for these conventional methods. The singleplex PCR positive samples were identified by presence of of ~ bp amplicon of the 16S rRNA gene

**Conclusion:** The singleplex PCR method using species specific primer for Aspergillus niger represented a rapid, specific and sensitive method to detect, in otomycosis cases of human.

**Keywords:** Aspergillus niger, otomycosis, 16S rRNA gene

# O45 - 698: DETECTION AND EXPRESSION CPSB GENE OF STREPTOCOCCUS PNEUMONIA BY REAL TIME PCR

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**Background and Aim:** Capsular polysaccharide genes is one the main virulence factor of Streptococcus pneumonia. It is well known that the cpsB gene has been recognized essential role for regulation of the production of capsular polysaccharide. Thus, we hypothesized that xylitol might affect the expression of pneumococcal capsular cpsB gene. The aim of this study was assay the effect of xylitol on Streptococcus pneumoniae cpsB gene.

**Methods:** S. pneumoniae ATCC strain 49619 were exposed to 5% xylitol in a period of 24 hours. During of incubation period, every 2 hours a sample was taken out. RNA isolation and cDNA cpsB gene was carried, the expression levels were measured by using a relative quantification method by real time PCR was performed. In addition, calibrator normalization in presence of the aroE gene of S. pneumoniae was used as a reference.

**Results:** The results showed that, the xylitol have shown more extensive changes of the cpsB gene expression levels than in the control medium. The means of the gene expression ratios were as CT= 19.92 and CT = 21.11 respectively.

**Conclusion:** The results revealed that the reductive effect of xylitol on capsular gene expression control. It may be able to alter the virulence of S. pneumoniae and reduce infectivity of this bacterium pertaining on mucosal surfaces infections.

**Keywords:** Streptococcus pneumoniae, expression, cpsB gene, Real time PCR

# O46 - 893: DETECTION OF MACROLID AND BETA-LACTAMASE RESISTANCE AMONG CAMPYLOBACTERS ISOLATED FROM DIARRHEA PATIENTS IN MARKAZI PROVINCE - 2015

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**Background and Aim:** Campylobacter species, especially C. jejuni and C. coli, are the most common bacterial causes of gastroenteritis in humans. In recent years, macrolid and beta-Lactamase resistance has emerged among many pathogenic and nonpathogenic species of bacteria .In Iran, limited studies have been determined antibiotic resistance of these bacteria, therefore, this study aimed to determine the frequency of macrolid and beta-Lactamase resistance and to investigate genotypic determinant of macrolid and beta-Lactamase resistance in campylobacters isolated from the stools of the dysenteric patients admitted to educational and medical centers in Arak, Iran.

**Methods:** In this descriptive cross-sectional study, diarrheal stool specimens of the patients admitted to educational and medical centers in Arak in the period from May 2015 to Sep. 2015 were collected and after phenotypic and genotypic investigation of campylobacter, resistance to macrolid and Beta-Lactamase was assessed using disk diffusion method. In addition,23S rRNA and oxa61 genes contributing to macrolid and Beta-Lactamase resistance in campylobacter were also investigated.

**Results:** Out of 108 dysenteric stool specimens, 28 (25.92%) campylobacter were isolated of which 26 (24.07%) were C. jejuni and 2 (1.85%) were C. coli. Phenotypic macrolid and Beta-Lactamase resistance prevalence in C. jejuni was obtained as 10 (35.71%),18 (64.28%) and in C. coli as 2 (7.1%) of all 2 types of resistance respectively. Frequency of,23srRNA macrolid and oxa61 Beta-Lactamase resistance gene was found as 7 (26.92%),7 (26.92%) and 1(50%),1(50%) in C. jejuni and C. coli, respectively.

**Conclusion:** This study showed Beta-Lactamase resistance in campylobacter isolates. This is very useful data for empirical therapy and demanding comprehensive study with more samples size to be accomplished.

**Keywords:** Campylobacter, Beta-Lactamase, Drug Resistance, Bacterial, Iran

# O47 - 1062: MOLECULAR GENOTYPING OF SHIGELLA SONNEI STRAINS ISOLATED FROM CHILDREN WITH BLOODY DIARRHEA USING PULSED FIELD GEL ELECTROPHORESIS ON THE TOTAL GENOME AND PCR-RFLP OF IPAH AND IPABCD GENES

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**Background and Aim:** The aim of this study was to analyze molecular epidemiology of Shigella isolates recovered from children with diarrhea in Shiraz (Southern Iran), using IpaH and IpaBCD PCR-restriction fragment length polymorphism (RFLP), and to determine pulsed feld gel electrophoresis (PFGE) patterns of total DNA of the S. sonnei isolates to fnd the clonality among these strains.

**Methods:** A total of 82 clinical strains of Shigella spp., S. sonnei (n = 61), S. flexneri (n = 16), S. boydii (n = 3) and S. dysenteriae (n = 2) isolated from the stool samples of 719 patients, aged two months to 14 years, with positive occult blood (OB) test were characterized based on their IpaH and IpaBCD genes PCR-RFLP patterns. Genomic DNAs of S. sonnei strains were analyzed by PFGE.

**Results:** All Shigella isolates were positive for both invasive genes and showed homogeneous profles for such genes except for two S. sonnei strains, which had IpaH bands with different sizes and PCR-RFLP profles. Forty palsotypes were determined among the 41 S. sonnei strains. Sample patterns were divided into two groups based on the drawn dendrogram with a similarity range of 70% to 100%.

**Conclusion:** The results revealed that the strains under study could be epidemically related. It seems that an alternative subtyping method is needed to study the relationship among clinical S. sonnei strains and their transmission. Here, we reported for the first time, two strains of S. sonnei with a different PCR-RFLP pattern for IpaH gene.

**Keywords:** Shigella sonnei, Restriction Fragment Length Polymorphism

# O48 - 1112: DETECTION AND ISOLATION OF MYCOBACTERIUM AVIUM SUBSP. PARATUBERCULOSIS IN RAW AND PASTEURIZED MILKS IN MASHHAD CITY BY NESTED PCR METHOD

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**Background and Aim:** Milk as a nutritious food is important to control quality of microbiology. Mycobacterium avium subsp. Paratuberculosis is one of the microorganisms in milk that causes Johne's disease in cattle and other ruminants.it has long been suspected as a causative agent in Crohn's disease in humans.

**Methods:** The aim of this study was to determine the level of Map positivity in 96 samples raw milk of bulk tank collected from different dairy farms and 544 samples of pasteurized milk. Milk Samples centrifuged at 4000 xg for 15 min. cream and pellet fractions were mixed together and DNA extraction was done by Organic extraction method. PCR assay was done with Map specific primers (P90–P91) to detect the IS900 and experimented with Nested PCR assay with 2 pair of primers include PARA 1,4 and PARA2, 3.DNA of M. paratuberculosis strain316F were used as positive controls.

**Results:** A total of 96 raw milk samples, 41 cases and 217 samples of pasteurized milk from544 examined samples were positive. Positive milk samples showed a single band in of 210bp on the agarose gel electrophoresis of PCR with PARA1,4 and then PARA 2,3 primers and by using IS900 PCR, Positive milk samples showed a single band in of 500bp.

**Conclusion:** This result showed that MAP can intern raw milk and pasteurized milk through cattle with subclinical signs Johne's disease and using it for a long period of time may cause health problems in human.

**Keywords:** Mycobacterium avium, Johne's disease, Crohn's disease, Nested PCR

# O49 - 1152: DETECTION OF CLASSES 3 AND 4 INTEGRONS IN MULTI-DRUG RESISTANT E. COLI STRAINS AND GENOTYPIC CHARACTERIZATION BY PULSE FIELD GEL ELECTROPHORESIS IN WEST OF IRAN

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**Background and Aim:** Integrons are DNA elements in Escherichia coli that are related to multidrug-resistance (MDR). Clonal types of resistant isolates are fingerprinted by Pulsed-Field Gel Electrophoresis. The aim of this study was to detection class 3 and 4 integrons and MDR in E. coli isolates obtained from patients and typing of isolates by using Pulsed-Field Gel Electrophoresis in two Sanandaj hospitals, Iran.

**Methods:** 120 clinical specimens were positive for E. coli considered and the antibiotic susceptibility determined using the Kirby-Bauer disk diffusion method. PCR were applied for detection of class 3 and 4 integrons in E. coli isolates. Isolated bacteria were typed by Pulsed-Field Gel Electrophoresis.

**Results:** In a total of 120 E. coli isolates, 42.5% had MDR. The results showed that 50.9% of the MDR isolates were positive for integrons included 15.68% class 3 and 3.92 % class 4 integrons.

**Conclusion:** Our results showed that int3 and int4 genes present in E. coli isolates obtained from patients cause MDR in this isolates. Resistance gene are transmitted easily, therefore appropriate programs are necessary to reduce this problem. Heterogeneity in pattern of isolates indicates that different of sources in community or hospital. In fact, none of inpatients and outpatients cannot introduce as a cause of outbreak.

**Keywords:** Genotyping, Escherichia coli, Beta-Lactam, Pulsed-Field Gel Electrophoresis

# O50 - 1159: DIFFERENT TREATMENT PROTOCOLS FOR ISOLATION OF NONTUBERCULOUS MYCOBACTERIA FROM AQUATIC SOURCES OF HOSPITALS IN TEHRAN

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**Background and Aim:** Aquatic ecosystems are an important source of non-tuberculous mycobacteria (NTMs). The culture of mycobacteria in routine media requires long-term incubation and fast-growing microorganisms and contaminants in the environment prevents isolation of mycobacterial colonies. For this reason, different treatment protocols for isolation of nontuberculous mycobacteria from aquatic sources of hospitals in Tehran were examined.

**Methods:** A total of 218 samples from the waters of the teaching hospitals of Iran University of Medical Sciences tap water, water and medical devices such as manometer, dialysis devices, Nebulizers, ventilator and dental yonolits were collected. Containers containing 50 ml of the sample were immediately transferred to the laboratory and examined. For the decontamination we used different concentrations of NaOH, SDS, CPC (cetylpyridiniumchlorid), oxalic acid and cyclohexamide.

**Results:** Medium with 1% solution of NaOH, 3% SDS and 5% oxalic acid was completely eliminated the contaminants and it also showed the lowest inhibitory effect on mycobacteria. The use of concentrations of 0.3 gr and 1 gr of cyclohexamide had the best inhibitory effect on growth of fungi.

**Conclusion:** Our goal was to create a better treatment protocol for inhibition of non-target microorganisms, with the least inhibitory effect on NTMs. According to this study, the use of NaOH 1%, SDS 3%, 5% of oxalic acid and 1 gr cyclohexamide can be a good way to isolate NTMs from aqueous samples considering the low sample size that was used for the first time.

**Keywords:** NTMs, Non tuberculosis mycobacteria, Aquatic hospital source, treatment protocol

Food Microbiology

## O51 - 27: DESIGNING DIRECT ELISA KEY FOR RECOGNIZING ENTEROTOXIN A STAPHYLOCOCCUS AUREUS IN RAW MILK SAMPLES TEHRAN PROVINCE

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**Background and Aim:** Enterotoxin of staphylococcus aureus are considered as the most important food poisoning factors and milk and its products usually have role in staphylococcal poisonings. Staphylococcus aureus bacteria is one of the causes of illness factor that in favorable condition in able to infect in human and animals.

**Methods:** 60 cow milk samples were gathered from traditional centers in Tehran region 3. Four different methods of Electrophoresis, Liquid chromatography with high function, Elisa sandwich and direct Elisa were investigated for investigation of toxins in milk.

**Results:** Among the used methods, the direct Elisa method had the best quality in recognizing toxin. The designed kit with this method had the 0.98 correct coefficient and was used for recognizing enterotoxin A in row milk. The results showed that from 60 evaluated raw milk samples by designed Elisa key, 23% of samples had enterotoxin A.

**Conclusion:** The designed Elisa test for recognizing staphylococcal when compared with this designed kit the amount of infection in raw milk of Tehran region 3, had relative sensitiveness, relative feature, matching and high repetition acceptance and there wasn't any reaction between enterotoxin of staphylococcus aureus intersecting. Also among selected samples, about 15 kinds of raw milk in Tehran region 3 were positive sample that included about 23% (percent) of milk samples.

**Keywords:** Staphylococcus, enterotoxin A, Elisa, Raw milk

# O52 - 32: THE COMPARISON OF MOUSE BIOASSAY AND ELISA METHODS FOR THE DETECTION OF CLOSTRIDIUM BOTULINUM TYPE A TOXIN IN FECAL AND FOOD SAMPLES

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**Background and Aim:** Botulinum toxin is known as the most potent toxin that can cause death even in small amount. Currently, the only accepted assay with which to detect active Clostridium botulinum neurotoxin is mouse bioassay. However, this method is slow and is not practical in many settings, and it results in the death of animals. In this study, we describe a sandwich ELISA method with the same sensitivity as that of the mouse bioassay.

**Methods:** Based on the sandwich ELISA method, two different antibodies that bind to epitopes without the interference of antigens are required. For this purpose, the horse antibody was poured at the bottom (Capture antibody) and monoclonal mouse antibody at the top of the toxin (Detection antibody) of each well and the toxin was titrated from the first wells. Then, the sandwich ELISA method was set up and optimized for the detection of botulinum toxin type A. In this study, sandwich ELISA and mouse bioassay methods were used for detection of botulinum toxin type A in 30 stool and 44 foods (such as cheese, yogurt, fish and …) samples.

**Results:** Toxin was detected in stool samples with good recoveries at concentrations as low as 0.2 µg/mL and in food samples at levels as low as 2 ng/g. Thus, the sandwich ELISA described here readily detects toxin in those stool and food samples tested.

**Conclusion:** The sandwich ELISA method is very precise and fast in detecting C. botulinum type A.

**Keywords:** Clostridium botulinum, botulinum toxin type A, sandwich ELISA

# O53 - 103: BIOSYNTHESIS OF 2-PHENYLETHANOL (ROSE-LIKE ODOR) BY PATHWAY ENGINEERING IN ESCHERICHIA COLI

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**Background and Aim:** 2-Phenylethanol (2-PE) is a higher aromatic alcohol with a rose-like fragrance. It is widely used in the cosmetic soaps, perfume, fuels and food industries. Most 2-PE is chemically synthesized from benzene, which is inappropriate to make cosmetic or food ingredient, microbial biosynthesis of 2-PE through Ehrlich pathway would be an alternative way.

**Methods:** For biosynthesis of L-Phenylalanine we used Escherichia coli FUS4 which is based on E. coli W3110. To enhance the flux toward phenylpyruvate, the plasmid pFABL harboring the genes pheAfbr, aroF, aroB and aroL were cloned under control of the IPTG-inducible Ptac-promoter. In addition, plasmid pJFA which is harboring the aro10 gene from Saccharomyces cerevisiae was cloned and co-Overexpressed in E. coli. The recombinant E. coli strains were cultured in the shake-flasks and 2-PE production was confirmed by HPLC and LC-MS.

**Results:** The overexpression of pheAfbr, aroF, aroB & aroL in E. coli FUS4 showed L-phenylalanine accumulation to 0.43 g/L from 5g glucose. By co-expression of pJFA, 2-PE appeared up to 0.3 g/L. Furthermore, by optimizing of growth condition a higher titer about 1.8 g/L of 2-PE was achieved. To the best of our knowledge, it is the highest 2-PE titer production so far reported in E. coli.

**Conclusion:** We demonstrate that 2-PE can be produced with high yield and titer by an engineered Escherichia coli directly from glucose.

**Keywords:** 2-Phenylethanol, biosynthesis, pathway engineering, Escherichia coli

# O54 - 481: PLACKET-BURMAN DESIGN TO IMPROVE LACTIC ACID PRODUCTION FROM WHEY MEDIUM BY AN INDIGENOUS LACTOBACILLUS SP.

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**Background and Aim:** Whey with a large amount of BOD is dangerous environment pollution. This important source of lactose is a useful substrate for fermentation process. Lactic acid with a several applications in industries is one of these fermentation products. It is naturally produced by wide spectrum of microorganisms including bacteria, yeast and filamentous fungi.

**Methods:** In this study the native strain of Lactobacillus was used as the fermenter agent. Salt whey medium was used as the culture medium and Plackeet-Burman design was employed for screening important parameters for lactic acid production from whey. These parameters were inoculum size, pH, temperature, agitation rate, yeast extract and whey concentration. To evaluate Lactic acid content titration was done.

**Results:** The Results showed that there were 6 important parameters in the fermentation of lactic acid: temperature 35ºC, yeast extract of 20 g/L, salt whey of 80g/L, pH 6, agitation rate of 50 rpm and primary inoculum between 105-107cfu/ml

**Conclusion:** The whey was used as carbon source for lactic acid production and this indigenous Lactobacillus sp. had high performance. The maximum lactic acid concentration with the whey medium was 2.5 Mol/day in 50ml substrate.

**Keywords:** Plackeet-Burman, Lactobacillus, whey, lactic acid, optimum conditions

# O55 - 514: MONITORING OF BACTERIAL CONTAMINATION OF READY- TO- EAT FOOD SAMPLES AND FRESH PRODUCTS IN RESTAURANTS, IN YAZD, IRAN

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**Background and Aim:** Consumption of ready- to- eat foods and fresh products has increased worldwide.

**Methods:** We were collected hamburgers (n= 41), cooked rice (n= 64), grilled meat and grilled chicken (n= 258), cooked meat (n= 346) and salads (n= 167) in restaurants in Yazd from October 2015 to February 2016. 876 samples were obtained and each sample was tested for the presence of fecal coliforms and Escherichia coli.

**Results:** No coliforms have been detected in hamburgers. The Coliforms have been detected in 8% cooked rice, 1% grilled meat and grilled chicken and 6% cooked meat. E. coli have been detected in 2% grilled meat and grilled chicken and 2% cooked meat.2% of grilled meat and grilled chicken had E. coli and Coliforms contamination, together. While 1% of cooked meat were positive for these contaminations. Among the salad samples 47% (n= 79) were contaminated with E. coli.

**Conclusion:** Results revealed that the prevalence of fecal contamination is heavily high in raw vegetable for salad among the five kinds of food analyzed.

**Keywords:** Salads, foods, Coliforms

## O56 - 735: SHIGA TOXIN AND ITS EFFECT ON IMMUNE CELLS

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**Background and Aim:** Shiga toxin is one of the most potent bacterial toxins detected. Found mainly in Shigella dysentery type 1 and some serogroups of Escherichia coli. Stx1 and Stx2 are the main groups of shiga toxin that, despite the toxic effects similar to the different antigenically. Hemolytic-uremic syndrome (HUS) is the most serious infection with Stx.

**Methods:** Human macrophage-like THP-1 cells exposed to Stx1 or Stx2 and then used the Luminex multiplex system to assess cytokine/chemokine concentrations in culture supernatant solutions. Of course other methods such as stimulation of different cell line with Stx and the detection of inflammatory cytokines by RT-PCR or animal models and preparation of cellular lysates and Western blotting analysis are used. This review is intended to examine the impact of shiga toxin on immune cells.

**Results:** Studies have shown that HUS is associated with an increase in the level of pro-inflammatory cytokines and chemokines produced by macrophages in the kidneys that induced with Stx.

**Conclusion:** In vitro, Stx2 compared to Stx1 can significantly increase the expression of GRO, G-CSF, IL-1β, IL-8, and TNFα, indicating a higher toxicity of Stx2, and a reason for the high rate of HUS in patients are infected with strains of E. coli (Stx2). Of course, both Stx1 and Stx2 toxins exhibit the same cytotoxic effects in macrophage THP-1 cells. Shiga toxins by activating the inflammatory pathway of NLRP3 promote inflammatory cytokines and apoptotic cell death. Another striking point is the impact of Stx2 in induced the expression of chemokine in human astrocytes.

**Keywords:** Shiga toxin, Cytokine, Chemokine

# O57 - 842: ETHNO MEDICINAL PLANT: ASSESSMENT OF ANTIFUNGAL ACTIVITIES OF PUNICA GRANATUM PEEL AQUEOUS EXTRACT WITH AGAR DISK DIFFUSION METHOD AGAINST CANDIDA ALBICANS.

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**Background and Aim:** Punica granatum peel (PGP) has been used in folk medicine as anti-inflammatory, antipyretic, antioxidant, antibacterial, antiviral agent. The present study was conducted to investigate the antifungal activities of PGP aqueous extract with agar disk diffusion method against Candida albicans (CA).

**Methods:** Agar disk diffusion method was performed as screen test. Macrobroth dilution method was accomplished to determination of MIC value. CA (ATCC 2091) was chosen to survey. Serial dilutions were prepared from aqueous extract in 1 (1 g/ml), 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8(0.125 g/ml), 1/16 (0.062 g/ml), and 1/32 (0.031 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar disk diffusion method, in 1, 1/2, 1/4, 1/8, 1/16 and 1/32 dilutions, inhibitory zones were seen 21, 17, 14, 14, 13 and 11 mm in diameters for CA. 1/16 and 1/8 dilution were realized for MIC and MFC about this fungus, respectively.

**Conclusion:** The results of this study demonstrate that aqueous extract of PGP prevents and destroys CA. Thus, PGP can be used in the treatment of candidiasis infections. Additional in vivo researches and clinical trials would be needed to justify.

**Keywords:** Punica granatum peel, Aqueous extract, Antifungal activities

# O58 - 858: EVALUATION OF ANTIMICROBIAL ACTIVITIES OF SATUREJA HORTENSIS L. ESSENTIAL OIL AGAINST SOME FOODBORN PATHOGENIC AND SPOILAGE MICROORGANISMS

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**Background and Aim:** Increasing multidrug resistance of pathogens forces to find alternative compounds for treatment of infectious diseases. Among the existing compounds, essential oils obtained from medicinal plants possess antibacterial and antifungal properties. Satureja hortensis L. (Lamiaceae) is an endemic herb growing wild in Iran with interesting pharmacological and biological properties.

**Methods:** S. hortensis essential oil was purched from Barij Essence Pharmaceutical Company (Kashan, Iran). The minimum inhibitory concentration (MIC), minimum bactericidal and fungicidal concentration (MBC/MFC) and inhibition zone diameter of S. aureus ATCC 25923, Escherichia coli ATCC 25922, Pseudomonas fluorescens OS8 and Alternaria alternata PTCC 5224 were determined through agar diffusion method (well and disc) and broth micro-dilution. In order to control the standard of method, the disks of antibiotics including Gentamycin, Vancomycin and Amphotericin B (10 mg/ml) were utilized as positive control. All experiment was done in triplicate.

**Results:** In all treatments, Gram-negative strains tested were more resistant to the antimicrobial activity of essential oil. Minimmum inhibitory concentration (MIC) of S. hortensis essential oil on the E. coli, P. fluorescens, S. aureus, and A. alternata was 2, 1, 1 and 0.5 (mg/ml), respectively. The agar diffusion tests showed that, the reduction of essential oil concentration significantly reduces the diameter of inhibition zone for all tested microorganisms.

**Conclusion:** These results demonstrated that S. hortensis essential oil could be used as a natural potential antimicrobial agents in the food and pharmaceutical industries.

**Keywords:** Satureja hortensis, Essential oil, Antimicrobial activity

# O59 - 865: ISOLATION AND IDENTIFICATION OF LACTIC ACID BACTERIA FROM TRADITIONAL SOURDOUGH OF CHAHARMAHAL AND BAKHTIARI PROVINCE

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**Background and Aim:** Lactic Acid Bacteria are probably abundant bacteria associated with human beings, which normally are associated with the digestive system and are also are present in habitats associated with food, including cereals. The aim of this study is to isolate and identify different species of lactic acid bacteria in traditional sourdough in Chaharmahal and Bakhtiari Province, and introduce them to the industry as probiotics.

**Methods:** After characterization of isolated bacteria, their probiotic properties were evaluated, such as resistance to acid, resistance to bile salts, Resistance to gastric juice enzymes such as pepsin and trypsin, the ability to produce antibacterial compounds, gas production and Exopolysaccharide production, then, the safety assessment of selected isolates was performed according to national standards and ultimately molecular detection was performed using 16S rDNA sequencing method.

**Results:** The results showed that 3 strains were selected with codes A0302, A0402, A0501, which have no pathologic activity, they had the characteristics of resistance to acid over 106 CFU/ml and resistance to bile salts with deterrence factor less than 0.4, respectively, the characteristics of anti-bacterial compounds production against Escherichia coli and Staphylococcus aureus bacteria, the ability of resistance to gastric juice enzymes and A0402 had the ability to produce gas.

**Conclusion:** According to 16S rDNA sequencing, it was found that A0501 and A0302 strains had the highest affinity or Pediococcus lolii and A0402 strain had the closest with Lactobacillus fermentum which could improve the quality and quantity of sourdough and subsequently breads were produced with better quality.

**Keywords:** Lactic acid bacteria, Probiotic, Chaharmahal and Bakhtiari, sourdough, 16S rDNA

# O60 - 975: DISTRIBUTION OF TOP-EIGHT PATHOGENIC O-SEROGROUPS IN SHIGA TOXIN-PRODUCING ESCHERICHIA COLI (STEC) STRAINS ISOLATED FROM DIFFERENT ANIMAL SOURCES IN IRAN

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**Background and Aim:** Shiga toxin- producing Escherichia coli (STEC) have been considered as one of the most important food-borne pathogens worldwide. Although a wide range of E. coli serogroups has been implicated in human infections, most severe cases were related to certain serogroups known as top-eight STEC serogroups. Lack of the availability of serotyping data in most developing countries has been a public health challenge to track outbreaks and to monitor the possible sources. We aimed to investigate the distribution of major STEC serogroups in a large collection of STEC strains isolated from different provinces and variety of sources for the first time in Iran.

**Methods:** Total of 118 non-duplicate STEC strains isolated in previous studies was selected. The isolates were obtained from cattle (35), sheep (25), goats (35), and pigeons (23). All isolates were subjected to a multiplex - PCR assay detecting the major virulence genes (stx1, stx2, stx2f, eae, Ehly) and then tested for top- eight O-groups including O26, O45, O103, O111, O113, O121, O145, and O157 by PCR.

**Results:** The predominant serogroup was O113 as it was detected in 5 cattle and 3 sheep and goats strains. It was followed by O26 and O111 each occurred in 3 isolates from the cattle group, respectively. The pigeon isolates did not belong to any of the tested serogroups.

**Conclusion:** This study revealed the existence of three important non-O157 serogroups in animal reservoir. Most strains with determined O-groups were from the bovine source that highlights the importance of cattle as reservoir of potentially pathogenic serovars.

**Keywords:** STEC, Serogroup, Animals, Iran

# O61 - 987: ANTIBACTERIAL HYDROXYPROPYL METHYL CELLULOSE EDIBLE FILMS CONTAINING NANOEMULSIONS OF THYMUS DAENENSIS ESSENTIAL OIL FOR FOOD PACKAGING

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**Background and Aim:** Application of edible films to perform as active packaging materials has been considered as highly noteworthy in food technology. Also a natural preservative such as EO could be helpful for application in the food industry.

**Methods:** So, in order to evaluate and compare the antibacterial activity of HPMC films enriched with either wild or cultivated Thymus daenensis essential oil, this study was designed to prepare nanoemulsion-base edible films (EBEF) containing T. daenensis essential oil (wild and cultivated) as a rich source of thymol, and investigate the antibacterial activity of the prepared films For this purpose, T. daenensis plants were collected, the stable nanoemulsions from T. daenensis oil were prepared and particle size of nanoemulsions was determined. In the next step, several EBEFs using HPMC and the nanoemulsions were prepared and different effective parameters were optimized.

**Results:** The results showed that edible films had noticeable antimicrobial activity against selected microorganisms, i.e. 47.0± 2.5 mm and 22.6±0.5 mm zone of inhibition against S. aureus for films containing wild and cultivated T. daenensis oil nanoemulsion, respectively.

**Conclusion:** Overall two types of EBEFs have great antimicrobial activity against selected food-borne bacteria and other selected microorganisms, and therefore these edible films can be considered as a potential candidate for application in active food packaging.

**Keywords:** Cellulose derivatives, Thymol, ρ-Cymene, Active packaging, Mechanical properties, Emulsification

# O62 - 1085: EVALUATION OF MICROBIOLOGICAL QUALITY OF COMMON SPICES IN MASHHAD

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**Background and Aim:** Spices are valued for their distinctive flavors, colors and aromas The microbiological quality of spices reflects the hygienic situation of the region of their production. The aim of this study was to determine the microbiological quality of spices packed and marketed in Mashhad.

**Methods:** The microbiological quality of 110 samples of eight types of common spices including red &black pepper, cinnamon, curry powder, red pepper, sumac, turmeric and mixes spices, collected from 6 packaging factories and retail market of Mashhad during 2014-2016, was determined. Microbiological analysis was done in accordance with national Iranian standard procedures (ISIRI) for analysis, that included as TAMB (ISIRI#5272), Molds count (ISIRI#10899-1), coliforms count (ISIRI#9263), B. cereus (ISIRI#2324), C. perfringens (ISIRI#2197), and the presence of E. coli (ISIRI#2946).

**Results:** Result shown average contamination rate with means of $3.5\times10^7$ TAMB, $2.54\times10^3$ coliforms, $3.11\times10^2$ B. cereus, $0.6\times10^2$ C. perfringens and $5.98\times10^3$ moulds (CFU/g). The numbers of total aerobic mesophilic bacteria (TAMB), Coliforms, B. cereus, Cl. perfringens and molds exceeded ISIRI#3677 “microbiology of spices-specification’s”, at (76) 69% (>5 × 105 CFU/g), (44)40% (>103 CFU/g), (9)8.18% (>102 CFU/g), (4)3.64 (>102 CFU/g) and (32) 21.9% (>5 × 103 CFU/g) of the analyzed samples, respectively. E. coli were detected in 24 (21.8%) samples. Evaluation of contamination rate of spice types shown highest in mixes spices (< 50%) and lowest in cinnamon (2%).

**Conclusion:** The results of this study demonstrate the relatively high microbiological contamination of spices which could be potential health threat to consumers.

**Keywords:** spice, coliform, TAMB, E. coli

Microbial Metabolites and Diseases

# O63 - 197: ROLE OF SOMATIC ANTIGENS OF MARSHALLAGIA MARSHALLI ON TLR4 EXPRESSION IN SPLENOCYTES OF ASTHMATIC MICE

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**Background and Aim:** Epidemiological studies suggest an inverse relationship between helminth infections and allergic disease. Innate immunity, especially antigen presenting cells (APC), have a key role for initiation of allergic responses. Numerous investigations revealed the key role of pattern recognition receptors (PRR) on APCs to balance or imbalance of immune responses. TLR4 is the most important PRR that plays an important role during asthma, on the other hand, several studies have shown that helminth parasites are masterful modulators of TLRs. This study was undertaken to evaluate the effect of somatic antigens of Marshallagia marshalli on the expression of TLR4 in the spleen of asthmatic mice.

**Methods:** Allergic airway inflammation was induced in BALB/c mice by sensitization with ovalbumin/Alum. The effect of M. marshalli somatic antigens on the suppression of asthma development was evaluated by lung histology and cellular infiltration in the lung. Expression of TLR4 transcripts was evaluated by quantitative real-time PCR assay.

**Results:** Histopathological findings in the lung of mice treated with ovalbumin together with the somatic antigens showed the attenuated level of hyperplasia and mucus production in comparison with the ovalbumin-treated group. Also, cellular infiltration into the BALF of treated mice was significantly lower than ovalbumin-treated mice. Results of quantitative Real-time PCR showed somatic products of M. marshali decreased expression of TLR4 mRNA in asthmatic mice.

**Conclusion:** This study provides new insights into immune modulation through TLR4 by the M. marshalli somatic products, which attenuated airway inflammation in mice.

**Keywords:** Asthmatic mice, Marshallagia marshalli. Somatic antigen, TLR4

# O64 - 247: THERAPEUTIC APPLICATIONS OF APTAMERS IN ORDER TO EXPOSURE WITH BACTERIAL TOXINS

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**Background and Aim:** Aptamers are ligands made of single stranded DNA (ssDNA), oligonucleotide RNA or short peptides which bind specifically to their target molecules (like bacterial protein toxins) with high affinity in a range of μM to ρM in order to identify or neutralize them. Systematic Evolution of Ligands by EXponential enrichment (SELEX) is an affinity-based screening method for aptamer isolation. Nowadays numerous of bacterial protein toxin's detection and neutralization strategies are going to be developed by the fact of aptamers affinity to their target molecules. Different therapeutic applications for the aptamers including new drug design, drug delivery systems, cell and tissue targeting, bacterial secondary metabolite (toxins) attachment and neutralization have been investigated.

**Methods:** Most applied methods for isolating aptamers are Chromatography and nano-magnet beads utilizing. Surface plasmon resonance (SPR) and capillary electrophoresis considered as the best methods for their affinity analysis.

**Results:** A surface antigen or bacterial protein toxin's active site may be considered as a suitable candidate for aptamer targeting. Yielded aptamer for these targets could be applied as high affinity ligands.

**Conclusion:** Isolated aptamers against a bacterial protein toxin could be applied to design a toxin detection kit, or a set of neutralization product depend its behavior facing to protein toxin.

**Keywords:** aptamer, bacterial toxins

# O65 - 283: EXTRACELLULAR VESICLES DERIVED FROM PROBIOTIC AS THE CANCER INHIBITION AGENT

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**Background and Aim:** Bacterial extracellular vesicles have come forth into notice as possible important agent to mediate host-pathogen interactions. The extracellular vesicles are multifunctional endogenous structures which are secreted by both gram positive and gram negative bacteria. Generally, the term EVs cover all types of secreted vesicles including exosomes, microvesicles and ectosomes which arise from different cell types in the body. Here, we have tried to find out the effect of extracellular vesicles derived from Lactobacillus rhamnosus GG (LDEVs) on the apoptosis and metastasis in the hepatic and colorectal cancer cell lines.

**Methods:** The LDEVs were purified from the conditioned medium of L. rhamnosus GG using ultrafiltration and confirmed by transmission electron microscopy. The cancer cells were treated with discrepant concentrations of purified LDEVs and the cell cytotoxicity, the expression of cea, bcl-2 and bax genes and secretion of CEA were assessed by the MTT assay, Real-Time PCR and ELISA, respectively.

**Results:** Our findings showed the significant cytotoxic effect on cancer cells ($p<0.05$). Furthermore, the apoptotic index (bax/bcl2 expression ratio) was significantly increased after treating with LDEVs ($p<0.05$). Finally, the level of mRNA and protein of CEA was significantly increased ($p<0.05$).

**Conclusion:** All in all, extracellular vesicles derived from L. rhamnosus GG had an apoptotic and anti-metastatic properties on the cancer cells.

**Keywords:** Lactobacillus rhamnosus GG, Extracellular Vesicles, cancer, Probiotic

# O66 - 464: SCREENING OF EXTRACELLULAR L-ASPARAGINASE PRODUCING BACTERIA FROM SOIL

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**Background and Aim:** Asparaginase; an immunosuppressive, is a chemotherapy agent. Soil bacteria are a rich source for enzymes. The aim of this study was to isolate and identify L-asparaginase producing bacteria.

**Methods:** In a screening program, 10 soil samples were collected from different areas of Tehran and Qom under standard conditions and were inoculated into M9 medium containing L-Asparagine. In the production medium, the amount of enzymes from the supernatant were evaluated in 24, 48, 72 hours by the colorimetric method. The colored strains were selected for further analyses followed by screening for higher enzymatic activity. The enzyme was purified by ammonium sulfate precipitation. The enzymatic activity was calculated; and its molecular weight determined by electrophoresis.

**Results:**157 colonies were isolated from the samples. 11 strains showed maximum production after 24 h of incubation and enzyme activity ranged 0.1 - 0.8 in IU /l. The concentration of ammonium sulfate saturated 50% for candidate strain showed sixteen-fold growth, 12.9 IU /l, and the molecular weight of purified asparaginase was 45 kDa. The strain was a Bacillus (sp).

**Conclusion:** The relatively high activity of purified asparaginase from a native strain, made this enzyme as a candidate for utilizing in medicine as well as biotechnology industries.

**Keywords:** Extracellular L-asparaginase, Bacillus (sp), Soil bacteria, Screening

# O67 - 467: EVALUTION OF STAPHYLOCOCCUS AUREUS AND STAPHYLOCOCCUS EPIDERMIDIS ISOLATED FROM PATIENTS IN GILAN PROVINCE IN TERMS OF THERE ABILITY TO FORM BIOFILM WITH PHENOTYPIC AND GENOTYPIC METHODS

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**Background and Aim:** Biofilm forming strains of Staphylococcus aureus and Staphylococcus epidermidis are among the most important causative agents of hospital infections. Ica operon consists of genes producing polysaccharide intercellular adhesion (PIA) plays a critical role in generating biofilm and establishment of infections by these bacteria. The aim of this study was to investigate the rate of biofilm formation by Staphylococcus aureus and Staphylococcus epidermidis species isolated from hospitalized patients in Gilan province using phenotypic and molecular methods.

**Methods:** A total of 30 Staphylococcus aureus and 30 Staphylococcus epidermidis samples were isolated from hospitalized patients. To investigate the ability for biofilm formation, three phenotypic assays including Congo red, tube turbidity and microplate methods were used. Presence of ica operon genes in all the 60 isolates were examined by PCR using ica specific primers.

**Results:** Among the 60 studied samples, 26 Staphylococcus aureus and 9 Staphylococcus epidermidis isolates had the definite ability to form biofilm. Results of PCR showed that the ica ADBC operon were present in 12 and 3 samples of Staphylococcus aureus and Staphylococcus epidermidis, respectively. The presence rate of icaA, icaD, icaB and icaC genes were 83%, 67%, 53% and 43% in Staphylococcus aureus, and 10%, 7%, 7% and 10% in Staphylococcus epidermidis, respectively.

**Conclusion:** Results indicated that the rate of biofilm formation in Staphylococcus aureus was significantly more than that in Staphylococcus epidermidis. There was also a meaningful correlation between the phenotypic ability to form biofilm and the existence of icaADBC operon genes in the studied species.

**Keywords:** Staphylococcus aureus, Staphylococcus epidermidis, Biofilm, icaADBC

# O68 - 475: BOTULINUM TOXIN IN THE TREATMENT OF PROSTATE AND BLADDER CANCER

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**Background and Aim:** Botulinum neurotoxin (BoNT) is produced by a gram-positive, rod-shaped, anaerobic bacterium. There are seven types A, B, C, D, E, F and G for this neurotoxin that all of them block transmission at neuromuscular junctions with inhibiting acetylcholine (ACh) release at the presynaptic cholinergic neuromuscular junction. Types A and B are only pathogenic in humans and lethal dose (LD50) of this neurotoxin is 1 ng per kg body weight. The structure of this neurotoxin is AB form. B fragment is responsible for attachment and A fragment has zinc dependent Enzymatic activity (methaloprotease). A and B types in humans have various therapeutic applications. Botulinum neurotoxin types A (Botox) can have curative effects on glandular function and lower urinary tract, like benign prostatic hyperplasia (BPH) and bladder overactive.

**Keywords:** Botulinum neurotoxin (BoNT), neuromuscular junctions, lower urinary tract benign prostatic hyperplasia

# O69 - 547: ANTICANCER EFFECTS OF ARAZYME, A BACTERIAL PROTEASE

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**Background and Aim:** Microbial-derived products have been used as therapeutic agents in many diseased conditions. Arazyme of Serratia proteamaculans is a zinc-containing metalloprotease with anti-inflammatory and anti-metastatic properties. The nucleotide sequence of araA, the coding gene of arazyme has been shown to be homologous to serralysin family of metalloproteases from other bacteria.

**Methods:** araA was synthesized and cloned using pET28a. E. coli Expression system was used to express arazyme. The His-tag recombinant protease was purified using Ni-NTA column. Skimmed milk assay and casein assay was used to test proteolytic activity. In vitro anticancer activity was test using MTT assay and MCF-7 cells.

**Results:** Recombinant arazyme was expressed and purified successfully. Protease assays showed that the recombinant enzyme contained proteolytic activity. MTT assay showed that arazyme was cytotoxic to the breast cancer cell line.

**Conclusion:** The recombinant arazyme has proteolytic activity and is a potential anticancer agent. Further in vitro and in vivo mechanistic studies are required to investigate the safety and actual anticancer effects this bacterial-derived protease.

**Keywords:** Arazyme, bacterial protease, anticancer

# O70 - 817: CREATING RESISTANT MSCS WITH BACTERIAL METABOLITES FOR BACTERIAL INFECTION DISEASES

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**Background and Aim:** Bacterial infections being a clinical syndrome that is a consequence of deregulated host inflammatory and immune responses to an infection could involve in tissue damage, multiple organ dysfunctions, and death. Bacterial infections treatment relies mostly on traditional antibiotics and supportive therapies, which are not sufficient to regress systemic inflammation. Moreover, mortality rate, antibiotic resistance and costs of bacterial infections treatment continue to be high. Thus, significant trials to improve and design more effective and operative therapeutic alternative is essential. Over the last decade, stem cells therapy have come to be a promising platform for infections treatment. Mesenchymal stem cells (MSCs) with non-immunogenic nature and relative ease of manipulation in vitro have been served as efficient targeted delivery vehicles for the treatment of cancers. They are capable of interfering with different levels of the pathophysiology of bacterial infection. In the present study, we hypothesized that bacterial toxin-MSCs would be more viable than MSCs in bacterial infection models. MSCs primed with microbial metabolite and then anti-infection, anti-inflammation capacity of theme was assessed in bacterial infection. Result & Conclusions: Our data revealed that MSCs primed bacterial metabolite have significant anti-bacterial activity against bacterial infections. Therefore, this novel MSCs' targeting system for treatment of bacterial infections is highly effective due to more antibiotics.

**Keywords:** Mesenchymal stem cells (MSCs), bacterial toxin, Targeted therapy, bacterial metabolits

# O71 - 886: THE EFFECTS OF BACTERIAL TOXIN ON BLOOD CANCER CELLS IN PRESENCE OF BONE MARROW-MESENCHYMAL STEM CELLS (BM-MSCS)

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**Background and Aim:** New treatment approaches have focused on Super Antigenes (SAg) as a promising group of compound to break down drug resistance in cancers. Hematological malignancies are one of the most noticeable concerns in clinic which show resistance to common chemotherapy regimens. In the current study, we sought for the Staphylococcal Enterotoxin B (SEB) effects on U937 and U266 cells with the consideration of human Bone Marrow-Mesenchymal Stem Cells (hBM-MSCs) roles.

**Methods:** We analyzed the effects of SEB on co-cultured U937 and U266 cells proliferation with hBM-MSCs by using MTT assay. Moreover, we evaluated the expression of IL-6 and IL-10 by Real Time-PCR technique.

**Results:** According to the results, SEB reduced the U937 and U266 cells proliferation, but hBM-MSCs suppressed the effects of SEB. In U937 cells IL-10 was up-regulated in all conditions; In U266 cells IL-6 and IL-10 showed up-regulation in all of the conditions.

**Conclusion:** Based on our results SEB can be used as a novel substance to suppress the proliferation of cancer cells. On the other hand, gene expression analyzing indicated that hBM-MSCs targeting is more effective than using them against cancer cells directly.

**Keywords:** U937 cell, Mesenchymal Stem Cell, IL-6 and Staphylococcal Enterotoxin B.

# O72 - 962: STUDY OF SALMONELLA TYPHI APOPTOSIS EFFECT IN PANCREATIC CANCER CELL LINES BY MEASURING BAX GENE EXPRESSION VIA REAL TIME PCR

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**Background and Aim:** In the worldwide, rising incidence of cancer cases show an urgent novel treatment. One of deadly cancer was pancreatic. So, Treatment of that is vital. Living bacteria have been used as therapeutics agents since the end of the 19th century. Several bacterial strains have been evaluating as cancer therapeutics so far, Salmonella typhi being one of them. Salmonella typhi is a pathogenic bacterium predominately found in the intestinal lumen. Salmonella have many desirable properties as antitumor-agent due to its ability to proliferate inside tumors and induce tumor regression. The aim of this study was to investigate the effect of salmonella typhi induced apoptosis on pancreatic cancer cell line by measuring the expression of Bax gene using Real Time PCR.

**Methods:** This experimental study was conducted on a standard strain; bacteria cultured on a SS-Agar medium. One clone was inoculated into BHI broth medium. After that, the required cell lines were grown in flask. In order to treat the cell line with bacteria and to examine the expression of the Bax gene, one million cells per well were cultivated cell culture plate. After 24 hours of incubation, RNA was extracted from the cells. After that, real time was done.

**Results:** The results were analyzed by REST program and Bax gene expression was evaluated before and after treatment with supernatant and bacterial extract. Hence, Salmonella typhi affect Bax gene expression.

**Conclusion:** This study showed, further investigation and developments in these studies will add a new dimension to cancer treatment.

**Keywords:** Apoptosis, Salmonella typhi, Pancreatic Cancer, Real Time PCR

# O73 - 1040: THE EFFECT OF NISIN ON APOPTOSIS OF COLON CANCER CELL LINES

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**Background and Aim:** This study offers the possibility of helping to prevent colon cancer. Live bacteria are placing inside vegetables, gut microflora, so sup and lysis made from live bacteria in food industry are our strategies to lower risk of cancer. One of carefully benefits of probiotics are taking the probiotics by following antibiotic treatment, because antibiotics have killed the gut's beneficial bacteria. Scientists are looking at various signs of colon cancer development. Probiotics are the largest group of inhabitation bacteria in the colon. Probiotics are beneficial microorganisms, like Lactic acid bacteria (LAB) and Lactobacilli bacteria which are using in the dairy industry and are having the most important category of safe usage. One of beneficial effects of lactobacillus are antiproliferative effects on colorectal cancer cell lines by involving in metastasis. The effect of Nisin was more evident of increasing concentrations in Caco-2 by MTT test. It caused inhibition of increase and enriched antiproliferation. This strategy has been inhibited cancer growth and chemoprevention.

**Methods:** The inhibitory effect of Nisin on the growth and proliferation of CaCo-2 cells was assessed by MTT assay and apoptotic effect of its was detected by Real-time PCR.

**Results:** The tumor multiplicity was significantly reduced by Nisin probiotic.

**Conclusion:** -

**Keywords:** Colon cancer, Nisin, Apoptotic effect, Probiotics

# O74 - 1083: SALINIVENUS IRANICUS AS A NEW SOURCE FOR ANTI-CANCER STEM CELL METABOLITES

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**Background and Aim:** Halophile and halotolerant bacteria are a group of extremophiles with the ability to live in high salt concentrations. There are some assumptions that living in salt concentrations similar to human blood plasma makes halophiles a good source of novel bioactive compounds or secondary metabolite with fewer side effects against diseases like cancer.

**Methods:** A total of 31 bacterial metabolites that were isolated from different saline environments of Iran have been evaluated for their anticancer potential against six human cancer cell lines of breast, lung and prostate cancers and a fibroblast cell line as the control. Downstream analysis of one the most potent metabolites was done using various assays to test the effect of this metabolite on cancer stem cells including sphere formation assay and colony formation assay. Furthermore, HPLC analysis had been used for purifying the effective molecule of the selected metabolite.

**Results:** Ten of examined metabolites were found to be cytotoxic against one or more cancer cell lines after 48 h with cell line specific activities. The metabolite from Salinivenus iranicus strain had the most potent cytotoxic effect on breast cancer cell lines with IC50 of 100µg/ml. More so, it lowered the size and number of sphere and colonies of these cell lines. With HPLC analysis the cytotoxic molecule had been partially purified.

**Conclusion:** Altogether, this study offers novel findings regarding the anti-cancer and anti-cancer stem cell potential of several halophilic bacterial species inhabiting the saline environments of Iran, which host valuable candidates for further isolation and characterization of bioactive molecules.

**Keywords:** Halophiles, Cancer, cytotoxic, Cancer Stem Cell

# O75 - 1086: THE EFFECT OF SACCHAROMYCES CEREVISIAE ON EXPRESSION OF EXOTOXIN S AND PHOSPHOLIPASE C GENES IN PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Saccharomyces cerevisiae is a probiotic yeast that has positive effects on health. Pseudomonas aeruginosa is an opportunistic pathogen bacterium. Exotoxin S and Phospholipase are toxins and important virulence factors in P. aeruginosa. The purpose is to determine the effect of Saccharomyces cerevisiae on expression of Exotoxin S and Phospholipase C genes in P. aeruginosa.

**Methods:** P. aeruginosa culture in Brain Heart Broth, Total RNA Extraction with RNA Protect Bacteria kit, cDNA Extraction was performed with QuantiTect Reverse Transcription kit. Saccharomyces cerevisiae culture in Potato Dextrose Broth, getting supernatant, lysate was obtained by sonication method. The bacterial suspension of P. aeruginosa was admixed three times with pure culture, supernatant and yeast lysate. Each Real-Time PCR test was performed with a QuantiTect SYBER Green PCR kit to measure the expression of Exotoxin S and Phospholipase C genes.

**Results:** The results of Real-Time PCR test represent the Phospholipase C gene expression efficiency in the culture of bacteria and supernatant 2.07, Exotoxin S gene expression efficiency in the culture of bacteria and supernatant was 1.77. Phospholipase C gene expression efficiency in the culture of bacteria and lysate -0.40 and Exotoxin S gene expression efficiency in the culture of bacteria and lysate was 0.54.

**Conclusion:** Supernatant of Saccharomyces cerevisiae has increased the expression of Exotoxin S and Phospholipase C genes in Pseudomonas aeruginosa, because the gene expression efficiency number is greater than 1. Lysate of Saccharomyces cerevisiae has decrease the expression of Exotoxin S and Phospholipase C genes in Pseudomonas aeruginosa, because the gene expression efficiency number is smaller than 1.

**Keywords:** Saccharomyces cerevisiae, Pseudomonas aeruginosa, Exotoxin S, Phospholipase C, Supernatant, Lysate.

# O76 - 1166: CELL-BASED SOLUTIONS FOR REFRACTORY INFECTIOUS DISEASES

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**Background and Aim:** For the majority of incurable chronic infectious diseases, cell-based treatments might be the ultimate solution. To date, different approaches based on cell-based interventions have been employed to treat refractory infectious diseases. Among these, the most common approaches include: (1) transplantation of intact stem cells, (2) manipulation of T cells to produce CAR T cells against specific pathogens and (3) gene targeting by using gene editing tools such as CRISPR/Cas system. Regarding the first approach, allogeneic mesenchymal stem cells have been used successfully to treat sepsis. As per the second approach, scientists have produced engineered human T cells (CAR T cells) which are effective against HIV infection with long lasting effect. Based on the third strategy the researchers were able to target and thus inactivate essential genes of Mycobacterium tuberculosis. Other scientists applied CRISPR/Cas system to excise HIV from the genome of living animals. Furthermore, the CRISPR/Cas system has been used to control of transmission of Zika virus and other mosquito-borne diseases by creating genetically engineered mosquitoes especially with knockout fertility genes. All in all, cell-based treatments and interventions can be the next generation of medical solutions for refractory lethal infectious diseases, which necessitates the attention of scientists, policy makers and higher healthcare authorities.

**Keywords:** Adoptive Immunotherapy; CRISPR-Cas Systems; Infectious Diseases; Stem Cells

Microbial Vaccines

## O77 - 114: CLONING AND CYTOPLASMIC EXPRESSION OF HUMAN PROINSULIN ANALOGUE IN ESCHERICHIA COLI

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**Background and Aim:** Insulin is a polypeptide hormone secreted from the beta cells of pancreas, which regulates glucose metabolism in humans. In diabetes, a metabolic disorder, the body does not have enough insulin or the insulin is not able to play its roles properly. The increasing incidence of diabetes increases the need for insulin. The purpose of this research is the cloning and cytoplasmic expression of human proinsulin glargine in the host Escherichia coli.

**Methods:** First, the proinsulin glargine DNA sequence was designed upon the gene bank data. The synthetic proinsulin fragment was sub-cloned into the expression vector pET21b (+). Then, the recombinant vector, pET21b-proInsG, was transformed into the E. coli BL21(DE3) cells. After Induction of the transformed cells by IPTG, the expression of recombinant protein was evaluated by using SDS-PAGE and Western blot techniques.

**Results:** The sub-cloning of the synthetic proinsulin fragment into the expression vector pET21b (+) was confirmed by using colony PCR and restriction enzyme mapping. SDS-PAGE and Western blotting confirmed the expression of 11 kDa recombinant proinsulin protein.

**Conclusion:** The expressed proinsulin protein can be converted to glargine insulin analog by specific enzymatic processes.

**Keywords:** Escherichia coli, insulin, human proinsulin analogue, cloning, expression, insulin glargine

# O78 - 221: ENHANCED IMMUNOGENICITY INDUCED BY ROTAVIRUS VP6 FUSED TO NSP4 PROTEIN IN MICE

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**Background and Aim:** Rotaviruses (RVs), a genus of the Reoviridae family, are a common cause of acute gastroenteritis (AGE) in children less than 5 years of age worldwide. More recently, two live attenuated RV vaccines (Rotarix TM and RotaTeq TM) are licensed in many countries, but concerns regarding safety and efficacy skewed researchers' focus on alternative vaccine candidates based on VP6 recombinant protein which has shown the most promising results.

**Methods:** Due to the adjuvant activity of NSP4 and highly immunogenic properties of VP6 of RV, we established a NSP4 112-175 -VP6 fusion protein. To evaluate the immunogenicity of our platform, we assessed anti-VP6 IgG, IgA and IgG subclasses response induced by NSP4-VP6 fusion protein with and without adjuvant Montanide ISA 50 V2 (M50) in BALB/c mice and compared with VP6 protein with or without M50.

**Results:** Our results have been indicated that adjuvanted-NSP4- VP6 fusion protein is able to increase titration of IgG and IgA response and reported that the presence of NSP4 induced a stronger immune response to the fused protein compared to the immune response elicited by administering the same protein alone. Moreover, IgG subclass analysis was shown that the adjuvanted-NSP4- VP6 fusion protein induced higher serum IgG2a titers than IgG1, skewed somewhat toward Th1-like response suggesting the role of NSP4 in that case.

**Conclusion:** The results suggest that our platform is able to enhance humoral response and use as an efficient but cost-effective immunogen for alternative RV vaccine development.

**Keywords:** Rotavirus, NSP4, VP6, Adjuvant, vaccine

# O79 - 232: EVALUATION OF THE IMMUNOGENICITY EFFECT OF CHITOSAN NANOPARTICLES CONTAINING THE CAMP-SIALIDASE RECOMBINANT PROTEIN AS A PROPIONIBACTERIUM ACNES VACCINE CANDIDATE IN THE MICE MODEL

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**Background and Aim:** Acne vulgaris is a common skin disease that almost 85% of people experience acne at some period of their lives. Propionibacterium acnes is part of the human skin microflora and plays a critical role in the pathogenesis of acne. According to clinical significance of the disease, some vaccines have been designed against whole cell or antigenic components of the pathogen, but still an effective vaccine is not provided. The aim of this study was to evaluate the immunogenicity of nanoparticles containing recombinant CAMP-Sialidase protein after oral administration in the mice model

**Methods:** In the present study, we used for the first time 80 nm sized chitosan nanoparticles containing the CAMP-Sialidase recombinant protein as an acne vaccine candidate. The Chitosan nanoparticles containing the recombinant protein was administered to the Balb/c mice for four times. Afterwards, the serum IgA and IgG and fecal IgA were tittered against the CAMP-Sialidase protein in the immunized and control mice using indirect ELISA method.

**Results:** After immunization, the results showed that the serum IgG and IgA titers were1:3200 and 1:32, respectively. The titration of the stool IgA was also estimated 1:16. In addition, the immunized mice showed no inflammation against challenging with 107 CFU of living P. acnes.

**Conclusion:** It seems that the oral administration of nanoparticles containing the CAMP-Sialidase recombinant protein as a vaccine candidate can induce systemic and mucosal immune responses against the CAMP-Sialidase recombinant protein in mice.

**Keywords:** Acne, Propionibacterium acnes, Chitosan Nanoparticle, Mucosal Vaccine.

# O80 - 243: IMMUNOGENICITY OF A DNA VACCINE ENCODING AG85A-TB10.4 ANTIGENS FROM MYCOBACTERIUM TUBERCULOSIS

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**Background and Aim:** Background: Tuberculosis is a life threatening disease that is partially prevented by BCG vaccine. Development of more effective vaccines is an urgent priority in TB control. Ag85a and Tb10.4 are the members of culture filter protein (CFP) of M. tuberculosis that have high immunogenicity.

**Methods:** In this study a previously described plasmid DNA vaccine encoding Ag85a-Tb10.4 was used to examine its capability in the stimulation of immune responses in an animal model. Female BALB/c mice were vaccinated with 100 µg of purified recombinant vector intramuscularly 3 times at two-week intervals and the levels of five cytokines including IFN-γ, IL-12, IL-4, IL-10 and TGF-β were measured.

**Results:** The levels of IFN-γ and IL-12 for the mice following immunization with Ag85A-Tb10.4 was significantly greater than that of the BCG and control group ($p<0.05$). However, there was no significant difference in the levels of IL-4, IL-10 and TGF-β between groups.

**Conclusion:** IFN-γ and IL-12 Th1 cytokines increased significantly in mice vaccinated with Ag85a-TB10.4 DNA vaccine in comparison to the control and BCG groups. Our results may serve as groundwork for further research into the prevention and treatment of tuberculosis.

**Keywords:** Antigen 85, BALB/c Mice, DNA Vaccine, Mycolyltransferase, Tb10.4

# O81 - 302: SELECTION, DESIGN, AND BIOINFORMATICS ANALYSIS OF THE PPS CHIMERIC PROTEIN AS A NEW VACCINE CANDIDATE AGAINST STREPTOCOCCUS PNEUMONIA

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**Background and Aim:** Pneumococcal infections are estimated to cause the deaths of 0.7–1 million children aged under 5 years. Serotype dependence, lack of immunogenicity in children under 2 years, and serotype replacement are major drawbacks of available pneumococcal vaccines, for which pneumococcal protein based- vaccines are promising. Here we aimed to in silico design of the PPS chimeric protein as a new vaccine candidate against Streptococcus pneumonia using bioinformatics tools.

**Methods:** We designed a new synthetic construct containing pneumococcal choline binding protein A, Pneumococcal adherence and virulence factor B, and Serine-Threonine Kinase antigens. The recombinant gene was optimized with codon optimization tools for a prokaryotic host. The mRNA structure of the gene and its stability as a protein were analyzed. Then, the accessibility, immunogenicity, B-cell epitope and MHC binding properties (using IEDB tools and Vaxigen), allergenicity (using Algpred), and chimeric protein 3-D structure (using I-TASSAR) with an appropriate linker were determined.

**Results:** Our results showed that the 540 amino acid fusion protein "PPS" containing four surface-exposed domains of three separate pneumococcal antigens had separated domains (by a 4-repeated EAAAK linker) and was stable with high antigenicity and immunogenicity properties. Also, there was no any allergenicity of the fusion protein induced in the prokaryotic host according to in silico analyses.

**Conclusion:** We concluded that this stable immunogenic construct can generate a potent immune response against S. pneumonia and may be considered as a pneumococcal vaccine candidate.

**Keywords:** Streptococcus pneumonia, recombinant PcpA-PavB-StKP protein, chimeric vaccine, design vaccine

# O82 - 376: BIVALENT FLAGELLIN IMMUNOTHERAPY PROTECTS MICE AGAINST PSEUDOMONAS AERUGINOSA INFECTIONS IN BOTH ACUTE PNEUMONIA AND BURN WOUND MODELS

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**Background and Aim:** Pseudomonas aeruginosa infections are a serious challenge to therapy because of the complex pathogenesis and paucity of new effective antibiotics, thus renewing interest in antibody-based therapeutic strategies. Immunotherapy strategies typically target selected virulence factors that are expressed by the majority of clinical strains of P. aeruginosa, particularly because virulence factors mediate infection. Type a and b flagellins (flagellin a+b) of P. aeruginosa are acute virulence factors that play a major role in the establishment of infection. We evaluate the protective efficacy of antibodies raised against “flagellin a+b” in both acute pneumonia and burn models.

**Methods:** Rabbits were immunized with “flagellin a+b” using freund's adjuvant and pooled were obtained. The Polyclonal antibodies were precipitated with 35% Ammonium sulfate solution. The in vitro functionality of the antibodies were analyzed by bacterial motility inhibition and opsonophagocytosis assays. Additionally, the protective properties of the antibodies were evaluated against various P. aeruginosa strains in both acute pneumonia and burn models.

**Results:** A combination strategy using antibodies against “flagellin a+b” provided greater protection against cell invasion and enhanced opsono-phagocytosis and decreased motility of P. aeruginosa strains, compared to strategies using antibodies against a single flagellin. Antibodies against “flagellin a+b”-protected mice infected with P. aeruginosa strains significantly reduced bacterial dissemination from the site of infection to the liver and spleen.

**Conclusion:** Passive immunization with antibodies against “flagellin a+b” led to an efficacious protection against P. aeruginosa infection in both acute pneumonia and burn models.

**Keywords:** Pseudomonas aeruginosa; “flagellin a+b”; antibody; burn; acute pneumonia

# O83 - 400: EVALUATION OF IMMUNIZATION EFFECTS OF CLOSTRIDIUM PERFRINGENS TYPE D AND CLOSTRIDIUM SEPTICUM EPSILON-ALPHA FUSION CHIMERIC PROTEIN IN LABORATORY ANIMALS

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**Background and Aim:** Enterotoxemia and braxy are fatal diseases caused by Clostridium perfringens type D and C. septicum which are heavy losses in livestock. Vaccination is the most efficient treatment for these diseases, because the high costs of producing clostridial vaccines using recombinant vaccines in suitable hosts can be very efficient economically and production time. Epsilon is a major lethal toxin which is produced by C. perfringens type D. It is responsible for a rapidly fatal enterotoxemia. C. septicum alpha toxin is responsible for braxy and gas gangrene.

**Methods:** In present study we used recombinant bacteria that carrying the vector containing fusion gene ε-α (E. coli/Rosetta/pGEMε-α). LB broth containing ampicillin was used for expression and induction with IPTG 0.5mM and incubated 5 hours in 37◦C. For study of properties fusion protein, after culturing of recombinant clone and centrifugation, the suspension and supernatant at various concentrations were injected to several groups of mice which group consisting of five mice (inject route in tail vein).

**Results:** According to the results, Mice were killed by suspension between 0.5-1ml and supernatant between 0.3-1 ml. All negative control samples which containing E. coli/Rosetta was survived.

**Conclusion:** Results showed that recombinant fusion protein which had been produced in E. coli/Rosetta/pGEMε-α can kill mice and is suitable for immunological studies and the production of recombinant fusion vaccine.

**Keywords:** Clostridium perfringens, Clostridium septicum, epsilon toxin, alpha toxin, fusion chimeric protein.

# O84 - 413: CONSTRUCTION OF KILLED BUT METABOLICALLY ACTIVE UROPATHOGENIC ESCHERICHIA COLI STRAINS AS A VACCINE CANDIDATE FOR URINARY TRACT INFECTION

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**Background and Aim:** Urinary tract infection (UTI) is the second most common infections disease, and uropathogenic Escherichia coli (UPEC) are estimated to cause 90% of cases. Although antibiotics are the standard treatment for UTI, they cause harmful effects on gut microbiome and enhance the growth of existing drug-resistant bacteria, which makes the research on vaccine reasonable. This project is conducted to develop a novel whole-bacterial-cell vaccine (Killed but Metabolically Active (KBMA) vaccine) that engenders potent immune responses and concurrently takes advantages of the potency of live attenuated vaccines and the safety of killed vaccines.

**Methods:** Using a photoreactive chemical substance (psoralen metabolite) followed by UVA irradiation (PUVA treatment), an inactivated E. coli bacteria was constructed. Meanwhile, uvrB gene of uvrABC excision repair system was deleted to inhibit repairing any intercross linkage between DNA strands after the treatment. The optimal doses of psoralen metabolite and UVA were confirmed. Then, the effects of PUVA treatment on inactivated bacteria were assessed by cell counting, florescent dying, XTT assay, and flow cytometry.

**Results:** PUVA treatment's optimal dose for E. coli isolates was 8µg/ml psoralen + 1000 mj/cm2 UVA. While the PUVA-treated isolates had a significant decrease in cell counting, the florescent dying of the un-grown parts of the culture plates revealed living bacteria. Meanwhile, XTT assay demonstrated the metabolic activity of these bacteria and flow cytometry confirmed their aliveness.

**Conclusion:** These PUVA-treated bacteria, with metabolic activity and proliferation inability, seem to be good enough to be tested in vitro and in vivo as a candidate for vaccine against UTI.

**Keywords:** Uropathogenic Escherichia coli, killed but metabolically active (KBMA), urinary tract infection, psoralen, ultraviolet A

# O85 - 469: DESIGN AND SYNTHESIS OF THE MODIFIED DNA ENCODING PROINSULIN GLARGINE ANALOGUE BY OVERLAP EXTENSION PCR

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**Background and Aim:** Insulin glargine is a long acting analogue of human insulin. Structural modifications, containing the elongation of B-chain C-terminus by two arginine residues and replacement of asparagine residue in the A-chain C-terminus by glycine, shift the isoelectric point of glargine towards neutral PH, making the molecule less soluble at physiological PH. The purpose of this research is designing and synthesizing a modified analogue of proinsulin glargine by insertion of thrombin cleavage site by using overlap extension PCR.

**Methods:** The DNA encoding the fusion protein of the modified proinsulin glargine analogue was designed upon the gene bank data. Then, the seven external and internal specific primers were designed upon the fusion DNA encoding sequence. The fusion DNA encoding fragment was synthesized during two distinct steps overlap extension PCR by using specific primers and PFU polymerase master mix. The final amplified fragment was cloned into the cloning vector pGEM-5Zf (+) and the recombinant vector, pGEM-proInsG, was transformed into the Escherichia coli DH5α competent cells.

**Results:** The PCR products were confirmed by agarose gel electrophoresis. The cloning of modified proinsulin analogue DNA encoding fragment into pGEM-5Zf (+) was confirmed by colony PCR and restriction enzyme mapping, and its integrity was confirmed by DNA sequencing.

**Conclusion:** Trypsin cleaves the C-terminus of both lysine and arginine residues. Since the glargine B-chain has several internal arginine and lysine residues, a number of impurities are generated following trypsin treatment. To overcome this problem, we introduced three thrombin cleavage sites into proinsulin DNA encoding sequence.

**Keywords:** Escherichia coli, human proinsulin analogue, glargine, overlap extension PCR, thrombin

# O86 - 489: A NOVEL CANDIDATE VACCINE OF BRUCELLA: EVALUATION OF IMMUNITY IN BALB/C MICE

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**Background and Aim:** Brucellosis is one the main causes of economic loss in domestic animals due to abortions and infertility. Brucella is a facultative intracellular pathogen and it survives in other cell types in addition to phagocytes. T cell mediated responses are necessary to eradicate the infection due to Brucella. In this study the potential of recombinant protein rTF/Bp26/Omp31 as a novel Brucella subunit vaccine, protective efficacy and immune response was evaluated in BALB/c mice.

**Methods:** After in silico design of rTF/Bp26/Omp31 structure, the gene was cloned and expressed in Escherichia coli BL21 (DE3). Finally, purified protein by Ni-NTA was used as immunogen to immunized mice.

**Results:** Mice immunized with rTF/Bp26/Omp31 showed a vigorous humoral and cellular mediated immunity; results were compatible with IgG1 and IgG2a levels and high amounts of IFN-γ, IL-12, IL-4 and IL-10 production in immunized mice, compare with control groups ($p < 0.05$). Compared to control groups, mice vaccinated with rTF/Bp26/Omp31 showed a significant response and protection against subsequent Brucella infection ($p < 0.05$).

**Conclusion:** Statistical analyses indicate similar responses in immunized mice exposed to rTF/Bp26/Omp31, compared with B. abortus RB51 and B. melitensis Rev.1 vaccines. These results showed the potential of rTF/Bp26/Omp31 as a candidate for the development of a subunit vaccine against brucellosis.

**Keywords:** Brucella, vaccine, recombinant, Omp31, Trigger factor (TF), Bp26

# O87 - 519: IN SILICO DESIGN AND IN VITRO EXPRESSION OF MULTIEPITOPE SUBUNIT VACCINE FROM UROPATHOGENIC ESCHERICHIA COLI AGAINST URINARY TRACT INFECTIONS

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**Background and Aim:** Urinary tract infections (UTI) are the second most common cause of infectious diseases in the community and hospital acquired infection. Uropathogenic Escherichia coli is the most common bacteria that cause UTI. The epitope-based vaccines are a new strategy in vaccine development approaches. The FimH from type 1 pili and the IutA siderophore receptor, play critical roles in the UTI process and have presented as ideal vaccine candidates against UTIs. There is no effective vaccine against UTI and the development of an ideal UTI vaccine is required.

**Methods:** In this study, we planned to design a novel multiepitope subunit vaccine of FimH and IutA. To identify the extracellular domains and epitope prediction of the virulence factors, we used software. vaccine constructs of continuous and discontinuous (conformational) B cell and linear CD4+ T cell epitopes of the two genes were designed. The three-dimensional structure of the construct was successfully modeled and validated. Subsequently, expression of the synthetic construct was performed using pET28a expression vector and E. coli BL21(DE3) host, respectively.

**Results:** Discontinuous B cell epitopes predictions of construct showed that the predicted epitopes are admissibly in common with virulence factors. Discontinuous epitopes result in stimulation an efficient humoral immune response. The recombinant protein was successfully expressed in E. coli host and purified under denaturation conditions.

**Conclusion:** In the present study, we designed and constructed the novel multi-epitope protein from UPEC based on in silico methods. Epitopes of the designed constructs could potentially induce effective immune responses

**Keywords:** Urinary tract infections, epitope-based vaccines, B cell epitopes, microbial vaccine

# O88 - 732: EVALUATE THE IMMUNOGENICITY OF CONJUGATED CAPSULAR TYPE III STREPTOCOCCUS AGALACTIAE WITH DIPHTHERIA TOXOID IN MICE AS A VACCINE CANDIDATE

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**Background and Aim:** Streptococcus agalactiae natural flora of the vagina and its pathogenicity in newborns is important. Because it directly to the vaginal birth or immediately after birth because of hospital infection causes meningitis and septicemia can be created. The aim of this study was isolation and purification of polysaccharide capsule type III S. agalactiae from the bedside and conjugation with diphtheria toxoid vaccine is in order

**Methods:** The bacteria were isolated from the vagina of pregnant women and the mass culture, bacterial type III polysaccharide capsule isolate and polysaccharide capsule was sure distilled. Correct conjugation was confirmed by double diffusion gel. Antigen tests confirm the non-toxicity, pyrogenicity in rabbits, toxicity, sterility were carried out.

**Results:** Investigation showed that conjugated antiserum prepared by the ability to react with bacteria and anti-diphtheria toxin and is capable of scaling. After 24 hours, no heat increases were observed in the test of fever in mice, so conjugate can be injected. Due to the lack of weight loss and mortality in mice one week after it was approved non-toxic. sterile tests showed that after incubation of the sample is sterile

**Conclusion:** The results showed that polysaccharide capsule active exploration and after of conjugated the correct form to keep all remaining epitopes can be used for injection and induction of antibodies

**Keywords:** Streptococcus agalactiae, diphtheria toxoid, vaccine, mice

Microbiomes

## O89 - 873: ABSOLUTE REAL-TIME QUANTIFICATION PCR PROCEDURE FOR QUANTIFICATION OF INTESTINAL MICROBIOME IN HUMAN FECAL SAMPLES

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**Background and Aim:** Gut microbiome plays an important role in the development and function of basic physiological processes, thus realizing gut microbiota community and global quantification of its composition is critical demand. Hence easy, accurate and rapid methods are urgently required. Herein absolute Real-Time quantification PCR procedure for quantification of intestinal microbiome in human Fecal Samples because of its cost effectiveness, convenience and rapidity was set up and designed.

**Methods:** Anaerobic bacteria were cultured in anaerobic culture media and incubated at 37 ºC in an anaerobic chamber. Eight fold serial dilutions of the bacterial suspension were prepared. To generate a standard curve for bacterial species in real time PCR, the bacterial DNA was extracted from different serial dilutions. 16S ribosomal RNA gene of targeted bacteria was applied as a template for amplification. Also fecal samples were melted and mixed with lysis buffer. Fecal DNA was further extracted too. Absolute real-time PCR was performed and analyzed using ABI 7500 and SPSS16.

**Results:** Well-established real-time PCR application and general optimization were obtained. The amplification was linear in the range of 101-108. Dissociation curves had correlation coefficient values between 0.98 and 100/888. The efficiencies for each assay were between 95/073and 99/804%.

**Conclusion:** Real-time PCR method is recommended for quantitative evaluation of gut bacteria composition because of its cost effectiveness, easy for setting up in most laboratories, suitable for quantitative monitoring of complex microbial ecosystems and convenience for precise enumeration

**Keywords:**16S rDNA, intestinal microbiome, fecal samples, absolute real time PCR

# O90 - 1034: COMPARISON OF THE GUT MICROBIAL COMMUNITY BETWEEN OBESE AND LEAN ADULTS IN AN IRANIAN POPULATION

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**Background and Aim:** Studies of the bacterial communities of the gut microbiota have revealed that obesity is associated with gut microbiota composition. Gut microbiota affects energy balance by influencing the efficiency of calorie harvest from the diet and its storage. However, there are some controversies about the gut microbial community in different populations. Therefore, this study was conducted to evaluate the gut microbiota composition in obese (BMI>30 kg/m2) and normal weight (BMI≤25 kg/m2) Iranian adults.

**Methods:** This study was performed on 31 normal weight adults and 28 obese adults (aged 20-50 years), including 8 and 5 males, respectively. Fecal samples were obtained from participants and their demographic and anthropometric parameters were collected. Total microbial DNA was extracted from faeces. Fecal concentrations of 8 bacterial genera were measured by Real time PCR using specific primers.

**Results:** The mean BMI of obese and normal weight adults were 34.1 and 22.3 kg/m2, respectively. The mean of age was different between two groups. We found a significantly lower Bifidobacterium and Akkermansia concentrations in obese patients than in lean controls ($P<0.05$). The E. coli concentration was higher in normal weight subjects than in the obese participants ($p=0.03$). No significant differences in Lactobacillus, Bacteroides, Roseburia, Actinobacter, and Prevotella concentrations were observed between groups.

**Conclusion:** Bifidobacterium and Akkermansia genus have been associated with lean status.

**Keywords:**gut microbiome, obesity, intestinal microbial composition

Nanomicrobiology

## O91 - 92: THE ANTI BACTERIAL EFFECT OF ZNO ON FOOD BACTERIA

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**Background and Aim:** Zinc oxide nanoparticles have Antibacterial properties against gram positive and gram negative bacteria. the purpose of this study, the impact of nano zinc oxide particles Antibacterial bacteria Salmonella typhi murium, Bacillus cereus and Staphylococcus aureus.

**Methods:** Antibacterial activity of the nanoparticles was performed on the bacteria S. typhi murium, Bacillus cereus and S. aureus, standard dilution of a dilution in agar – pipe 10-1 -10-12 and how to use the Nano-particle suspension (net) holes in the concentrations of 10, 30, 50 Mcg on ml were evaluated and the results analyzed by SPSS Version16 analysis.

**Results:** In dilution tube diameter in agar for the method of bacteria S. aureus infections in 10-1 till 10-4 were reported but the oxide nanoparticles had no effect on the bacterium S. typhi murium and Bacillus cereus. On the method of suspension net diameter growth of nanoparticles in the holes for the three methods, the bacteria S. aureus, S. typhi murium and Bacillus cereus were the most reported overall sensitivity of the bacteria in a concentration was on 50mg/ml. Diameter growth in the concentration of 50 mg/ml for the bacteria Staphylococcus aureus on the14mm, Salmonella typhi murium in12mm and Bacillus cereus in12mm. ($p < 0.05$).

**Conclusion:** Nanoparticles zinc oxide antibacterial properties in the front significant bacteria S. typhi murium, Bacillus cereus and S. aureus bacteria showed more sensitivity in front of S.s aureus nanoparticles showed zinc oxide from itself.

**Keywords:** Nano zinc oxide particles, Staphylococcus aureus, Salmonella typhi murium, Bacillus cereus

# O92 - 253: STUDY OF MONOCLONAL ANTIBODIES PRODUCTION WITH HYBRIDOMA TECHNIQUES AGAINST OF VISCERAL LEISHMANIASIS

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**Background and Aim:** Leishmaniasis is widely distributed around the world and they are greatly important for human as a parasite of serious infectious diseases. It is one of the important contagious diseases caused by parasites of the genus Leishmania which is common throughout the world and Iran. The aim of this study was to apply different strategies to production of monoclonal antibodies (mAbs) against of Leishmania infantum strain in Iran.

**Methods:** At first, standard strains were cultured and antigens of L. infantum were obtained. After that, immunization of Balb/c mice and determining of antibody titer were conducted. For hybridoma cell formation, Isolated lymphocyte cells from spleen of immunized mice and myeloma cells were fused in the rate of 10 to 1 ratio at presence of polyethylene glycol and limiting dilution method was applied for monoclone determining.

**Results:** About, over than 30 positive mono clones were Hybridoma obtained that 3 clones have optical density over than 1.5. We named these clones as 6B2 FVI6, 6B2 FVI3and 6G2 FV2 which were selected for limiting dilution. From these hybrids, Anti-Amastigotes L. infantum monoclonal antibodies were obtained. The result of Isotype determination showed IgG2b sub-class in 6B2 FVI6 and 6B2 FVI3 monoclones.

**Conclusion:** This study produced monoclonal antibody against Iranian strain of L. infantum for the first time. These antibodies have reactivity against Iranian strain of L. infantum and could be used in diagnosis of visceral leishmaniosis.

**Keywords:** monoclonal antibody, visceral leishmaniasis , hybridoma techniques

# O93 - 600: AN IN VITRO STUDY OF ANTIMICROBIAL AND ANTI-BIOFILM EFFECT OF PHOTO-THERMAL THERAPY BY NANOCHITOSAN-LOADED INDOCYANINE GREEN ON PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is one of the main cause of nosocomial infections that has ability to gain acquired resistance after antibiotic therapy. Antibacterial photo thermal therapy (aPTT) is an alternative approach to overcome this problem. In this study we examined the effect of aPTT with nanochitosan-loaded indocyanine green (NCs-ICG) as a photosensitizer, on viability of planktonic and biofilm forms of P. aeruginosa

**Methods:** aPTT effects were analyzed using 10 mg/mL NCs-ICG and diode laser light at 810 nm wavelength with irradiation time of 60 second against P. aeruginosa ATCC 27853. The antibacterial effect was determined via colony counting and antibiofilm effect assessed by crystal violet assay.

**Results:** Our result showed that aPTT with NCs-ICG could reduce (1.1 log) the cell viability of planktonic P. aeruginosa and could remarkably decrease biofilm formation of P. aeruginosa (52.7%) compare to control group ($P < 0.05$).

**Conclusion:** This study indicates that NCs-ICG aPTT can be an effective strategy in treatment of clinical cases as it can significantly reduce cell viability and biofilm formation of P. aeruginosa

**Keywords:** Antimicrobial photo-thermal therapy, Pseudomonas aeruginosa, Nanochitosan, Indocyanine green

# O94 - 602: AN IN VITRO EVALUATION OF PHOTOCYTOTOXICITY EFFECT OF PHOTO-THERMAL THERAPY USING NANO-CHITOSAN LOADED INDOCYANINE GREEN ON HUMAN GINGIVAL FIBROBLAST CELLS

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**Background and Aim:** Recent investigations have suggested that antimicrobial photothermal therapy (PTT) can be an alternative treatment for the management of periodontal infections. However, currently, there is very limited data regarding the photocytotoxicity of this approach on human gingival fibroblast (HuGu) cells. Aim: The in vitro optimal concentrations of nano-chitosan loaded indocyanine green (NCs-ICG) as a photosensitizer and the irradiation time of diode laser emission at 810 nm wavelength was evaluated by assessing the photocytotoxicity of the treatment on HuGu cells.

**Methods:** Monolayers of HuGu cells were incubated with various final concentrations of NCs-ICG (500, 750, 1000, 1250, 1500, 1750, and 2000 g/mL). Three exposure times of the diode laser (30 s, 60 s, and 2 × 30 s irradiation with an interval of 1 min between each) were tested and cell viability was determined using neutral red assay.

**Results:** NCs-ICG significantly reduced HuGu cell viability at concentrations below 1000 µg/mL ($P < 0.01$). Cytotoxicity was higher when the cells were treated with 2 × 30 s irradiation with an interval of 1 min and then again exposed to the laser for 30 s.

**Conclusion:** High doses of NCs-ICG with the lowest exposure time of light source and without cytotoxic effects may be an effective strategy for PTT as an alternative treatment for periodontal disease.

**Keywords:** Human gingival fibroblast, Photo-thermal therapy, Cytotoxic effect, Cell viability, Indocyanine green, Nano-chitosan

# O95 - 750: LUMINESCENT VIBRIO FISCHERI AS A PLATFORM FOR BIOSYNTHESIS OF CUO NANOPARTICLES

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**Background and Aim:** Vibrio fischeri NRRL B-11177 is one of the luminescence bacteria that has special value in biotechnology especially in microbial biosensors construction. oxidoreductase enzymes of this bacterium have involved in the process of luminescence radiation and the fact that the role of bacterial enzymes in the production of nanoparticles is determined by the type of bacteria is very likely possibility of synthesis of nanoparticles. In this study, we investigated biosynthesis of copper oxide nanoparticle by V. fischeri NRRL B-11177 that has commercial applications in the industry, medical and health sciences, especially as a gas sensor, anti-cancer and anti-microbial agents.

**Methods:** To prepare the nanoparticles, first, 1 ml fresh suspension of the above bacterium (OD600 = 0.1) was added to 98 ml of LB without NaCl. Then 1 ml of copper sulfate solution (Cu(NO3)2.5H2O) at the final concentration of 1 mM was added to the above suspension. After incubation at 30°C and 200 rpm, the change in color from light blue to dark green and eventually brown indicates the formation of copper nanoparticles. The above suspension was centrifuged and the supernatant containing the nanoparticles after filtration was evaluated by ultraviolet spectroscopy (UV-vis), X-ray diffraction spectrometry (XRD), Fourier transform infrared spectroscopy (FTIR) methods.

**Results:** Spectrophotometric observations showed strong and broad peak in 280 nm wavelength and XRD spectra confirmed Monoclinic CuO nanoparticle synthesis with average size of 14 nm. The results of FTIR analysis indicates the presence of regenerative enzymes for the synthesis of nanoparticles.

**Conclusion:** These results approve ability of luminescence bacteria (e.g. V. fischeri) to copper oxide nanoparticles synthesis.

**Keywords:** Biological synthesis, CuO nanoparticle, luminescence bacteria, Vibrio fischeri, XRD, FTIR

# O96 - 1019: INVESTIGATING THE EFFECTS OF ZINC OXIDE NANOPARTICLES BASED ON ZEOLITE AGAINST BIOFILM FORMATION OF ENTEROCOCCUS FAECALIS

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**Background and Aim:** Enterococcus faecalis is one of the main causes of endodontic infections. Biofilm formation ability is the major factor of E. faecalis pathogenicity which makes it resistant to antimicrobial agents. The properties of zinc oxide nanoparticles based on zeolite has various applications in different fields such as local drug delivery system. The purpose of this study was to evaluate the effects of zinc oxide nanoparticles based on zeolite against biofilm formation in the E. faecalis.

**Methods:** primary, 20 gr zeolite was mixed with 14 gr zinc acetate and after passing the filter, it was calcified at 400 ° C, then the amount of zinc oxide nanoparticle stabilization on zeolite was investigated. The effects of concentration of 0.05 and 0.1 gr/ml zinc oxide nanoparticles based on zeolite Were evaluated on biofilm formation of E. faecalis using crystal violet assay.

**Results:** The stabilization degree of zinc oxide on zeolite was reported at about 13.5%. The results of the EDAX test indicate an increase in levels of zinc oxide on zeolite. Crystal violet assay showed the reduction of optical absorption in both concentrations of zinc oxide (from 0.75 to 0.4 and from 0.92 to 0.63 for 0.05 and 0.1 gr/ml, respectively).

**Conclusion:** Zinc oxide nanoparticles based on Zeolite can be a good option for disinfectants to eliminate bacterial biofilms.

**Keywords:** Enterococcus faecalis, Zeolite, Zinc oxide

Probiotics and Prebiotics

# O97 - 5: FEASIBILITY STUDY OF PRODUCTION A CHOCOLATE CONTAINING BIFIDOBACTERIUM BREVE ENCAPSULATED BY CALCIUM ALGINATE AND RESISTANT MAIZ STARCH BY USING EMULSION TECHNIQUE AND EVALUATION OF ITS SURVIVAL

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**Background and Aim:** Chocolate is considered as a healthy food in societies due to its nutritional and delightful properties, ease of use and variety of forms. It is necessary to eliminate the limitations in order to use probiotics in chocolate. Therefore, to use probiotics in chocolate making, microencapsulation of probiotics can be an efficient method to protect their survival in unfavorable conditions of manufacturing process and digestive system and thus exploit the nutritional properties of chocolate.

**Methods:** Calcium alginate and resistant starch were used for making capsules by emulsion method and Bifidobacterium breve was added to chocolate in two forms: free and microencapsulated; and survival, acidity, water activity, solid content and sensory attributes of chocolate were monitored during 30 days storage at 4℃. The morphology and size of microcapsules were measured, SEM technique and particle size analyzer.

**Results:** Probiotics in microencapsulated form had higher survival compared to those in free form. Acidity and water activity of chocolate with free form of probiotics were reported higher than those of samples with microencapsulated probiotics. Also chocolate contained microencapsulated probiotic had higher solid content than that of samples with free form. In addition, microencapsulation had no undesirable effect on sensory attributes of chocolate.

**Conclusion:** Microencapsulation helps to enhance the survival of probiotic bacteria in chocolate and manufacturing probiotic chocolate is now made possible.

**Keywords:** probiotic, Bifidobacterium breve, microencapsulation, chocolate

# O98 - 200: EFFECT OF LACTOBACILLUS DELBRUECKII ON FETUIN A IN NORMAL AND STZ-INDUCED DIABETIC MICE

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**Background and Aim:** Probiotics are living organisms that are useful for human health. Fetuin A is an abundant plasma protein known to inhibit insulin signaling and pathologic calcification, has emerged as a promising candidate biomarker for diabetes risk. The aim of this study is an investigation of the anti-diabetic effect of Lactobacillus delbrueckii PTCC1057 on diabetic mice Fetuin A

**Methods:** 20 female mice ranging from 6 to 8 weeks old weighting 20 to 25 grams were selected. Then, at 10 of them 180 mg/kg streptozotocin was administered as intra peritoneal injection. After ten days, level of their blood sugar was measured and the mice whose blood sugar level was over 200 mg/d1 were considered to be diabetic. Then the mice were orally administered 0.1 ml of PBS (control group) or Lactobacillus delbrueckii PTCC1057 (3x107 CFU/ml) (experimental group) one time a day for 4 weeks. Finally, their serum was extracted and ELISA test was administered to these serums with ELISA test kit for Fetuin A.

**Results:** Fetuin A had increase in diabetic control group in comparison with non-diabetic groups and its significant decrease in diabetic experimental group in comparison with non-diabetic groups and also its inappreciable decrease in diabetic experimental group in comparison with diabetic control group was observed

**Conclusion:** The results obtained from this study suggest that applying Lactobacillus delbrueckii PTCC1057 can have anti-diabetics effects. However, clinical studies are required to prove these effects

**Keywords:** Lactobacillus delbrueckii, Diabetes, Anti diabetic, Probiotics, Streptozotocin, Fetuin A

# O99 - 558: MEASURING THE IMPACT OF SCROPHULARIA STRIATA IN PATIENTS WITH URINARY TRACT INFECTION

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**Background and Aim:** Introduction: Scrophularia striata're thirsty plant with the scientific name of the form the monkey's darknessin western regions of Iran (Kermanshah, Ilam) grows decoction of the herb in the treatment of inflammation, infection, cold, pain and gastrointestinal disorders.

**Methods:** Patients are selected on the basis of clinical criteria by a urologist and based on clinical symptoms, ultrasound parameters and laboratory tests. Urinary tract infections were determined in 40 patients with simple cystitis and pyelonephritis and 40 controls using urine analysis and urine culture. Other risk factors for urinary tract infections were determined based on medical records and questionnaires. Decoction of thirsty plant was used in these two groups. Urinalysis and experimental results were compared in control group and control group. In addition, the relationship between the effects of thirsty plants and other risk factors was evaluated.

**Results:** The effects of thirsty herbs in the patients after a boiled potato period of the thirsty herb and inflammation of the urinary tract were significantly reduced ($P < 0.05$). In the patients group, the effects of thirsty herbal medicine showed a significant correlation with urinary tract infections ($p < 0.05$).

**Conclusion:** Regarding the role of thirsty plants in preventing disease progression, urinary tract infection and its association with clinical factors, it can be used as a herbal remedy for the treatment of urinary tract infections and a non-invasive drug in the early treatment of patients Urinary tract infection.

**Keywords:** Urinary tract infection, thirsty plant

# O100 - 717: TO STUDY THE EFFECT OF PROBIOTIC (BACILLUS SUBTILIS) ON THE SERUM GGT (GAMMA_GLUTAMYL TRANSFERASE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS

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**Background and Aim:** The aim of this study is the effect of probioticon (Bacillus subtilis) the serum GGT (Gamma_Glutamyl Transferase) change due to acetaminophen in male Wistar rats.

**Methods:** 24 rats were randomly assigned to four groups: control, probiotics (Bacillus subtilis), acetaminophen and probiotics (B. subtilis) plus acetaminophen. Control group rats have been received only saline by gavage. Probiotics group rats received it for four weeks, (every rat.1 g per day). Acetaminophen as single dose of 850 mg/kg (i.p) has been administered in acetaminophen group. Final group were received probiotics (B. subtilis) and acetaminophen similar to other groups. Blood samples were prepared from the rats and serum liver enzyme GGT were assessed by spectrophotometric method. Statistical analysis was done by SPSS 24 with one way ANOVA and post hoc Tukey's test.

**Results:** Compare of serum GGT level between groups indicated that statistical difference between groups control and acetaminophen and between acetaminophen and probiotics (B. subtilis) plus acetaminophen was significant ($P<0.05$). These results indicated that acetaminophen has been increased GGT level in compare to control group and probiotic (B. subtilis) lowered this level again.

**Conclusion:** Probiotic (B. subtilis) compensated increase of oxidative stress marker (GGT) due to acetaminophen toxicity.

**Keywords:** Bacillus subtilis, GGT, acetaminophen

# O101 - 722: TO STUDY THE EFFECT OF PROBIOTIC (PROVITA) ON THE SERUM GGT (GAMMA_GLUTAMYL TRANSFERASE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS.

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**Background and Aim:** To study the effect of probiotic (Provita) on the serum GGT (Gamma_Glutamyl Transferase) change due to acetaminophen in male Wistar rats.

**Methods:** The rats were randomly divided into four groups: the first group was considered as the control group (receiving only saline by gavage). The second group were received probiotics (Provita) for four weeks, (every rat.1 g per day). A single dose of 850 mg/kg (i.p) of the acetaminophen was given to third group. The fourth group were received probiotics (Provita) and acetaminophen similar to second and third group, respectively. Blood samples were prepared from the rats and serum liver enzyme GGT were assessed by spectrophotometric method. Statistical analysis was done by SPSS 24 with one-way ANOVA and post hoc Tukey's test.

**Results:** Serum GGT level in groups 1 to 4 was 6.4, 13.3, 11.2, 10.6 respectively. Statistical difference between groups 3 &4 and 1 & 3 was significant ($P<0.05$). These results indicated that acetaminophen has been increased GGT level in compare to control group and probiotic (Provita) lowered this level again.

**Conclusion:** probiotic (Provita) compensated increase of oxidative stress marker(GGT) due to acetaminophen toxicity

**Keywords:** provita, GGT, acetaminophen

# O102 - 828: USE OF PROBIOITICS OF LACTOBACILLUS PARACASEI STRAINS TO DECREASE HYPEROXALURIA IN RATS

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**Background and Aim:** Hyperoxaluria is a major risk factor for renal stones, in most cases, it appears to be sustained by increased dietary load or increased intestinal absorption. Urinary oxalate excretion is an important contributor to calcium oxalate stone formation. Recently. Some probiotics can degrade oxalate in vitro. This study showed the reduction in urinary oxalate excretion in rats by use of oxalate-degrading bacteria.

**Methods:** In this study used Lactobacillus paracasei strain AKPL-IR (GenBank accession no. JF461540.1), Lactobacillus paracasei strain AKKL-IR (GenBank accession no. JF461539.1), They are probiotics which were able to degrade oxalate in vitro. We induced hyperixaluria by adding ammonium oxalate 3% in rat diet. 18 male Wistar rat were randomly divided into three groups. Rats in the control group received the usual diet during the study. Negative controls were added to the diet of ammonium oxalate and ammonium oxalate in addition to the positive control bacteria levels were 1o9cfu.Measurement of urinary biochemical factors on (-7,0,7,14,21, and 28) rats were transferred to metabolic cages and 24-hour urine samples were collected. The volume, urinary calcium and oxalate levels were calculated by the kit.

**Results:** Results showed the significantly reducing rate of urinary oxalate and calcium excretion at the positive control group, also decreased calcium oxalate stone formation in their kidney.

**Conclusion:** The present study aimed to investigate the importance of Lactobacillus paracasei strains toward reduce of urinary oxalate

**Keywords:** Hyperoxaluria, Lactobacillus paracasei strains, probioitics

# O103 - 866: EFFECTS OF LOCAL PROBIOTICS FROM IRAN ON PROLIFERATION OF MDA-231 AND MCF-7 BREAST CANCER CELL LINES

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**Background and Aim:** Breast cancer as the most commonly diagnosed cancer is the second cause of cancer death among women. Since this problem has been increased all over the world, discovery and development of new treatments with high efficacy and low side effects is critical. Probiotics due to production of anti-cancer compounds can affect important metabolic pathways, and regulate proliferation, differentiation, apoptosis and angiogenesis. The purpose of this study was to investigate the effects of local probiotics from Iran on proliferation of MDA-231and MCF-7 breast cancer cell lines.

**Methods:** Local probiotic bacteria mix including Lactobacillus acidophilus, Bifidobacterium bifidum and Lactobacillus casei were cultured on MRS broth at 37°C for 24 h, centrifuged at 4500 rpm for 10 min and supernatant lyophilized for further experiments. MCF-7 and MDA-231 (3× 103 per well) were seeded on 96-well culture plates in DMEM containing 10% (v/v) FCS and antibiotics and treated with different concentration (50µg, 100 µg, 200 µg, 400 µg, 800 µg / ml) of local probiotics from Iran for 72 h. Cell viability was determined by MTT [3-(4,5-dimethylthiazol-2-y-2,5- iphenyltetrazolium bromide] assay.

**Results:** Based on the MTT assay the bacteria mix inhibited growth of MDA-231 cells in a time and dose-dependent manner and the (400 µg) was determined as IC50. Moreover, the mix had no considerable effect on MCF7 cells growth.

**Conclusion:** According to the results, the probiotic bacteria mix might play an important role on growth inhibition of MDA-231 cells.

**Keywords:** cell growth, IC50, MTT, toxic

# O104 - 943: INVITRO AND INVIVO CHOLESTEROL LOWERING PROPERTIES OF LACTOBACILLUS SPECIES ISOLATED FROM HUMAN MILK

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**Background and Aim:** Human milk is a rich source of Lactic Acid Bacteria (LAB) with potential health-promoting benefits. According to reports, several Lactobacillus species are able to lower both total cholesterol and low-density lipoprotein cholesterol levels in human.

**Methods:** L.plantarum (TA0042 and TA0060), L. gasseri (TA0057), Enterococcus faceium (TA0033), L. fermentum (TA0058), Pediococcus acidilactici (TA0037) isolated from healthy mother milk were assessed for bile salt hydrolase activity (BSH), while cholesterol reducing abilities of live and dead bacterial cells were also examined by standard procedures. For in vivo experiments, the selected bacterial strains were gavaged (1x109 CFU/ml) daily into male Balb/c mice models fed with 1) standard basal diet (SBD) and 2) cholesterol rich diet (CRD). At the end of 6 weeks, total serum cholesterol levels of the control and treated mice were determined and the results statistically analyzed.

**Results:** The tested LAB isolates demonstrated significant ($P< 0.05$) bile salt hydrolysis and cholesterol assimilation ability. Live bacterial cells reduced cholesterol levels significantly compared to their dead cells. L. gasseri (TA0057) (195.67%) and L. plantarum (TA0060) (193.78%) displayed the highest cholesterol removal percentage, respectively. Both the isolates also showed significant reduction in serum cholesterol levels in CRD Balb/C mice, respectively. No mortality or behavior changes were observed in the experimental animal groups during the test period.

**Conclusion:** L. plantarum TA0060 and L. gasseri TA0057 strains demonstrated significant cholesterol reducing effects in in vitro and in vivo conditions

**Keywords:** Human milk, Probiotic, Lactobacillus, Hypocholesteremia, Balb/c mice

# O105 - 960: EVALUATING THE ANTIBACTERIAL ACTIVITY AND BACTERIOCIN LIKE SUBSTANCE, BLIS, PRODUCED BY INDIGENOUS LACTOBACILLUS CASEI STRAINS

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**Background and Aim:** A significant property of probiotic Lactobacillus species is their ability to inhibit pathogens owing to the production of proteinaceous compounds referred to as bacteriocins.

**Methods:** In this study we selected 18 L.casei strains isolated previously from traditionally dairy products, poultry and human milk. All isolates were checked for their antibacterial action against pathogens like Salmonella typhi, Shigella dysenteriaea, Klebsiella pneumoniae, Listeria monocytogenes, pseudomonas aeruginosa and Escherichia coli by stab plate technique. The isolates showing antibacterial action against the pathogens were selected for evaluating their bacteriocin producing potential. The supernatant fluid of the selected strains was tested for activity after pH neutralization, treatment with proteolytic, lipolytic and glycolytic enzymes. The strains being BLIS positive were selected for further characterizations after subjection to purification methodologies.

**Results:** Among the selected 18 L. casei strains, eight strains showed maximum antibacterial activity by stab method. However, during agar well diffusion assay the neutralized supernatant fluid (NSF) of only 3 strains showed antibacterial activity and were selected for further characterizations. The NSF of all three strains was sensitive to the proteolytic and glycolytic enzymes while one of the strains appeared sensitive to the action of lipase. The BLIS produced by these strains was purified by ammonium sulphate precipitation, ultrafiltration, concentration and HPLC and their activity (AU/ml) and yield calculated

**Conclusion:** Indigenous L. casei strains appeared potential bacteriocin producers with enhanced antibacterial action against significantly important pathogens and might have potential application as suitable alternatives to antibiotics in future

**Keywords:** bacteriocin, lactobacillus casei, BLIS, antibacterial activity

# O106 - 1097: EFFECT OF SACCHAROMYCES CEREVISIAE ON EXPRESSION TOXIN GENES (LT AND ST) IN ENTEROTOXIGENIC ESCHERICHIA COLI (ETEC)

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**Background and Aim:** Probiotics are introduced as beneficial microorganisms for the health of communities. Saccharomyces cerevisiae is considered as one of the most effective strains for improving the function and treatment of gastrointestinal diseases in order to control intestinal pathogens. diarrhea caused by Enterotoxogenic Escherichia coli (ETEC), is the main cause of many diarrheal diseases, sometimes referred to as travel diarrhea. Heat liable toxin (LT) and Heat stable toxin (ST) are the important cause of diarrhea. The aim of this study is to evaluate the effect of Saccharomyces cerevisiae on the expression of the produced toxin genes (LT and ST) by ETEC.

**Methods:** Supernatant and lysate of Saccharomyces cerevisiae were prepared. The levels of ST and LT toxin genes expression were measured by Real Time technique in the present of concentrations of 1/2 MIC of supernatant and the highest concentrations for lysate.

**Results:** Supernatant just decreased the expression of LT. Lysate increased the expression of ST and LT gene expression.

**Conclusion:** The effect of supernatant produced from probiotic strain is likely to have a greater effect than lysate in inhibiting or decreasing the expression of toxin genes in ETEC.

**Keywords:** Enterotoxogenic Escherichia coli, Probiotic, Saccharomyces cerevisiae

# O107 - 1102: THE INHIBITORY EFFECTS OF THE CELL WALL OF LACTOBACILLUS REUTERI ON CELL PROLIFERATION IN THE COLORECTAL CANCER HCT-116 CELL LINE

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**Background and Aim:** Colorectal cancer is the third most common cancer in the world and about 1.4 million new cases diagnosed in 2012. Gut microbiota plays a critical role in colorectal cancer. One group of them is probiotics which, when administered in adequate amounts, confer a health benefit to the host. we aimed to evaluate the effects of Lactobacillus reuteri to inhibit the proliferation and growth of colorectal cancer HCT-116 cell line and detected.

**Methods:** Cell wall and cytoplasmic extraction of L. reuteri were prepared and HCT-116 cell line was treated with them. Probiotic effect on cell proliferation was assessed.

**Results:** The cell wall and cytoplasmic extraction of L. reuteri decreased cell proliferation and increased apoptosis in a dose and time-dependant manner.

**Conclusion:** Morotomi found that, L. casei shirota strain, a lactic acid bacterium, has a great anti turmeric property. Malihe Riki, showed that L. casei and paracasei's cell wall have cancer prevention potential in K562 and their properties will increase in relation with concentration. In this study, that L. reuteri's cell wall and cytoplasmic extraction have effectively inhibited the proliferation and growth of colorectal cancer HCT-116 cell line.

**Keywords:** Colorectal cancer, Lactobacillus reuteri, HCT-116 cell line

The Education and Research in Microbial Sciences

## O108 - 434: THE CRISPR-CAS9 TECHNOLOGY AND GENE THERAPY

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**Background and Aim:** There are CRISPR-Cas Systems on Chromosome of most bacteria and Archaea. this system causes the acquired immune against foreign DNA. Clustered Regularly Iinterspaced Short Palindromic Repeats (CRISPRs) and their CRISPR-associated (Cas) proteins constitute the CRISPR-Cas immune system. Foreign DNA is broken by CAS gens products and placed in CRISPR region. this part is named spacer. Spacer is transcribed into crRNA (CRISPR RNA). This proprietary fragments identify foreign DNA. Eventually, the virus genome will be destroyed by Cas Proteins. The use of CRISPR-Cas system in therapeutic approaches has become increasingly relevant in different fields of medicine. Today CRISPR-cas9 technology is a powerful tool for targeted genome manipulation for treatment of genetic abnormalities and viral infections for example: HIV, Cancer, Hepatitis and Cystic Fibrosis. This modern system requires two functional cas9 protein (endonucleases HNH, RUVC1-lik domain) and a g RNA (guide RNA) sequence for effective double-stranded breakage at a desired site. in addition to, target any region of the genome is performed by design of g RNA (both tracrRNA and cr-RNA) favorable. Specificity CAS9 is related PAM (Protospacer Adjacent Motif) sequence Which is cut DNA and also edit the target gene. The DNA damage can be repaired by NHEJ (non-homologous end-joining) yielding short random insertions or deletions at the target site or a DNA sequence that shows partial complementarity to the target site can be inserted during HDR (homology-directed repair) for precise genome editing purposes

**Keywords:** CRISPR- Cas9, single guide RNAs, genome editing, crRNA

## O109 - 601: ANTI-HER2 SCFV EXPRESSION IN SHUFFLE HOST

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**Background and Aim:** Breast cancer is the leading cause of cancer death in women worldwide. Relationship between expression of human epidermal growth factor 2 (HER2) and malignity of breast tumors has been led to the production of monoclonal antibodies targeting HER2+ tumors. Single chain variable fragment (scFv) is the smallest functional region of antibody for antigen binding. scFvs improve their penetrability into tumors while retaining specific affinity and having low immunogenicity. Specially, anti-HER2 scFv can efficiently target the therapeutic proteins, drugs, and nanoparticles toward HER2+ cancer cells. In this study, a novel Escherichia coli protein expression strain, SHuffle, was used for expression of anti-HER2 scFv. SHuffle is trxB-, gor-, which helps disulfide bond formation in cytoplasm, and overexpresses cytoplasmic DsbC which plays chaperon role to enhance protein-folding capacity. SHuffle is an ideal host for expression of disulfide-bonded recombinant proteins.

**Methods:** Anti HER2-scFv gene was cloned in expression vectors pET22 b (+) and pET28. Anti HER2-scFv expression was induced with 1 mM IPTG in the growth temperature of 30°C. The expression of anti HER2-scFv in the SHuffle host was investigated by SDS-PAGE. Furthermore, the protein expression was confirmed using Western blot analysis probed with anti-His antibody.

**Results:** The protein bands around 28 kDa were detected in the SDS-PAGE gel. Furthermore, Western blot analysis using anti-His antibody confirmed the successful expression of Anti HER2-scFv.

**Conclusion:** The results showed that SHuffle is a suitable strain for the expression of anti HER2-scFv containing two disulfide bonds.

**Keywords:** scFv, HER2, E. coli SHuffle, Expression vectors

## O110 - 882: MEDICINAL PLANT: STUDY ON ANTIFUNGAL EFFECTS OF STEVIA REBAUDIANA AQUEOUS EXTRACT AGAINST CANDIDA ALBICANS.

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**Background and Aim:** Stevia rebaudiana (SR) has been used in folk medicine as antioxidant, anti-inflammatory, antipyretic, antiviral and antibacterial agent. The aim of the new study was to evaluate antifungal effects of SR aqueous extract against Candida albicans (ATCC 2091 (CA)) with macrobroth dilution and agar well diffusion methods.

**Methods:** Macrobroth dilution method was accomplished to determine MIC value. Agar well diffusion method was performed as screen test. Serial dilutions were prepared from aqueous extract in 1, 0.5, 0.25, 0.125, 0.062 and 0.031 g/ml concentrations in distilled water. Distilled water was used as negative control.

**Results:** In this study, 0.062 and 0.25 g/ml concentrations were realized for MIC and MFC about this fungus, respectively. In agar well diffusion method, in 1, 0.5, 0.25, 0.125, 0.062 and 0.031 g/ml concentrations, inhibitory zones were seen 19, 16, 15, 14, 12, and 10 mm in diameters for CA, respectively.

**Conclusion:** The present research demonstrates the antifungal activities of aqueous extract of SR against CA, suggesting to use as an antifungal agent. Extraction of active molecules and clinical trial will be the future works to peruse.

**Keywords:** Stevia rebaudiana, Aqueous extract, Antifungal effects, Candida albicans.

# O111 - 1022: INTRODUCING AND ASSESSING VIRTUAL REALITY (VR) AS A NEW TECHNOLOGY IN LEARNING THEORY AND PRACTICAL CONCEPTS OF MEDICAL MICROBIOLOGY AND IMPROVEMENT OF NON-COGNITIVE SKILLS

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**Background and Aim:** Learning microbiology is a challenge for students. In addition, practicing lab works for learning purposes is not always possible due to many limitations. Simulation methods may facilitate learning both for theory and practical concepts. Virtual reality (VR) is a novel technology which is able to simulate environments and objects. The present study aimed to evaluate the role of virtual reality technology in academic achievement and motivation of students in microbiology.

**Methods:** A microbiology lab environment and also structures of microorganisms including the details a bacterial cell was simulated using 3D Max, After Effect software based on lesson plans of medical and paramedical microbiology courses. 42 students of medicine and lab technology were divided to two groups of case and control. Both groups were conducted to pre-test. The case group watched the learning content prepared by virtual reality technology. The control group used traditional learning contents. Then, both groups were committed to post-test. The case group was also asked to answer a questioner to assess their motivation and acceptance for using VR e-contents.

**Results:** The results showed that there was a significant difference between the two groups on their theory exam scores. No significant difference was found between the groups on their lab scores. The rate of motivation and acceptance for using VR learning contents was high.

**Conclusion:** VR content function much better than traditional contents in learning microbiology. However, for learning microbiology lab concepts a combination of virtual and physical lab exercises is suggested.

**Keywords:** e-Learning, Microbiology, Virtual Reality, Simulation

The Emerging Infectious Diseases

## O112 - 189: POTENTIAL APPLICATION OF NATURAL HONEY TO GROW IMMUNITY AGAINST INVASIVE ASPERGILLOSIS IN A MURINE MODEL

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**Background and Aim:** The prevalence of Invasive fungal infections (IFIs) has grown in last decades. With the increasing number of immunocompromised patients, Aspergillus fungi has become known as one of the major causes of human infection. Innate immunity plays an essential role in host defense against invasive aspergillosis. Developing new antifungal agents is restricted cause of eukaryotic nature of fungi. Therefore, interest in application of natural immunostimulators to increase immune responses against pathogens has expanded. This work was designed to study the immunological effects of three Iranian honeys on some parts of innate immunity as well as survival rate in mice infected with Aspergillus fumigatus.

**Methods:** Mice were treated with honey (1.5g/kg BW/orally) for 10 days. At day 6, Aspergillus fumigatus conidia (5 × 105/ml) were injected intravenously to the infection groups. The animals were sacrificed at day 11 and their peritoneal macrophages and spleen cells were cultured. Macrophage killing and nitric oxide production along with some proinflammatory cytokines (IL6, IL1β) were measured as well. Ten mice from infectious groups were kept for 30 days and survival rate was monitored.

**Results:** Honeys alone had immunomodulatory effect on proinflamatory cytokines, NO production and understudied genes. However, by inducing infection, groups under honey treatment had higher cytokine and NO production and TLR2 gene expression compared to infection alone group ($p<0.05$).

**Conclusion:** It is concluded that honey could boost the immune system and increase survival time in invasive aspergillosis.

**Keywords:** invasive aspergillosis, honey, aspergillus fumigarus

# O113 - 317: FREQUENCY OF NEISSERIA GONORRHOEAE GENITAL INFECTIONS IN PREGNANT WOMEN AND WOMEN WITH SPONTANEOUS ABORTION

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**Background and Aim:** Neisseria gonorrhoeae is one of the causing factors of sexually transmitted diseases (STDs). This bacterium infects the epithelial cells of the cervix of women and the urethra of men; however, the symptoms in the lower genitalia are found only in a small percent of people. The aim of this study was comparison frequency of N. gonorrhoeae genital infections in among two groups of pregnant women (spontaneous abortion and normal pregnancy).

**Methods:** This study was cross-sectional from 2015 to 2016, in Sanandaj, Iran. Our studied population consisted of 109 women who had spontaneous abortion at the gestational ages of 11-20 weeks as the first group and, 109 normal pregnant women at the gestational ages of 20-37 weeks who had shown no signs of abortion as the second group. Using specific primers and extracted DNA from endocervical swabs a polymeras chain reaction(PCR) test was conducted for detection of N. gonorrhoeae. Data analysis was performed using Chi-Square Test and T Test. In all of these steps, level of 5% was considered as significant.

**Results:** The total frequency of N. gonorrhoeae infection was 0 (0%) In both groups of women

**Conclusion:** Prevalence of N. gonorrhoeae infection in both groups was zero. it was not associated with spontaneous abortion It is necessary to further study with larger sample size to detect infection in this group of women performed better examined.

**Keywords:** Neisseria gonorrhoeae, spontaneous abortion

# O114 - 675: Q FEVER AMONG HUMAN AND ANIMAL IN IRAN; A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Q fever is a main zoonotic disease around the world. The aim of this meta-analysis was to estimate the overall seroprevalence of Coxiella burnetii among human and animal population in Iran.

**Methods:** Major national and international databases were searched from 2005 up to August 2016. We extracted the prevalence of Q fever antibodies (IgG) as the main primary outcome. We reported the prevalence of the seropositivity as point and 95% confidence intervals.

**Results:** The overall seroprevalence of IgG phase I and II antibodies of Q fever in human was 19.80% (95% CI: 16.35-23.25%) and 32.86% (95% CI: 23.80-41.92%), respectively. The herd and individual prevalence of C. burnetii antibody in goat were 93.42% (95% CI: 80.23-100.00) and 31.97% (95% CI: 20.96-42.98%), respectively. The herd and individual prevalence of Q fever antibody in sheeps were 96.07% (95% CI: 89.11- 100.00%) and 24.66% (95% CI: 19.81-29.51%), respectively. The herd and individual prevalence of C. burnetii antibody in cattle were 41.37% (95% CI: 17.88-64.86%) and 13.30% (95% CI: 2.98- 23.62%), respectively. Individual seropositivity of Q fever in camel and dog were 28.26% (95% CI: 21.47-35.05) and 0.55% (0.03-2.68), respectively.

**Conclusion:** Seroprevalence of Q fever among human and domestic animals is considerable. Preventative planning and control of C. burnetii infections in Iran is necessary. Active surveillance and further research studies are recommended, to more clearly define the epidemiology and importance of C. burnetii infections in animals and people in Iran.

**Keywords:** Q fever, Coxiella burnetii, Iran, Epidemiology, Seroprevalence, Seropositivity

# O115 - 766: DETECTION OF ENTEROHEMORRHAGIC ESCHERICHIA COLI RELATED GENES IN ESCHERICHIA COLI STRAINS BELONGING TO B2 PHYLOGROUP ISOLATED FROM URINARY TRACT INFECTIONS IN COMBINATION WITH ANTIMICROBIAL RESISTANCE PHENOTYPES.

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**Background and Aim:** This study was conducted to detect the prevalence of EHEC virulence genes and antimicrobial resistance profile of Escherichia coli strains belonging to B2 phylogroup implicated in Urinary tract infections in Semnan, Iran.

**Methods:** From 240 urine samples 160 E. coli strains were isolated, biochemically. Then, E. coli isolates were examined by Multiplex-PCR for phylogenetic typing and detection of virulence genes (hly, stx1, stx2, eae) associated with Enterohemorrhagic E. coli. Finally, Antimicrobial resistance of E. coli isolates were characterized using Disk Diffusion method.

**Results:** From 160 E. coli isolates, 75 strains (47%) were assigned to B2 phylogenetic group and prevalence of virulence genes were as follow: hly (21.3%), stx1 (16%), stx2 (10.6%) and eae (6.7%), subsequently. Phenotypic antimicrobial resistance of B2 isolates showed that all isolates were sensitive to Meropenem and Furazolidone and then highest frequency of resistance was observed to Streptomycin, Oxytetracycline, Neomycin, Nalidixic acid and Ampicillin (98.7% to 49.3%). Also low resistance prevalence was observed in case of Ceftizoxime, Lincospectin, Imipenem, Chloramphenicol and flurefenicole (16% to 1.3%).

**Conclusion:** The data suggest a high prevalence of antibiotic resistance in UPEC strains belonging to B2 phylogroup even for the antimicrobials using in pet and farm animals and their potential to cause EHEC specific clinical symptoms which may represent a serious health risk since these strains can be transmitted to GI tract and act as a reservoir for other uropathogenic E. coli and commensal strains.

**Keywords:** Escherichia coli, B2 Phylogroup, EHEC Genes, Antimicrobial Resistance

# O116 - 812: PREVALENCE AND GENOTYPING OF HIGH RISK HUMAN PAPILLOMAVIRUS BY PCR ASSAY IN WOMEN USING LIQUID BASE PAP SMEAR

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**Background and Aim:** Human papillomavirus (HPV) is one of the most common causes of sexually transmitted disease in both men and women worldwide. HPV is associated with a variety of clinical conditions that range from innocuous lesions to cancer. The objective of our study was to assess the prevalence of HPV infection and its types in pap smear samples using polymerase chain reaction (PCR) assay.

**Methods:** In this cross sectional study, 112 patients with HPV infection were recruited. Demographic data were collected. HPV-DNA extractions from pap smear samples and polymerase chain reaction (PCR) were performed for detection genotypes.

**Results:** HPV infections were identified in 69 of 112 (61.60%) patients. The median age of patients was 34 years (range, 20-59 years). Twenty-five different types of human papilloma virus were detected in. Of them, 43 (38.39%) were infected with high-risk HPV, 24 (21.42%) with low-risk HPV, and 2 (1.78%) with HPV types of unknown risk. High-risk types HPV 16 and HPV 18 were each found in 16 (23.18%) and 4 (5.79%) patients with HPV infection. HPV 16 was the most frequently occurring high- risk type.

**Conclusion:** The relative importance of HPV genotypes in the development of cervical lesions needs further investigation understand the epidemiology of HPV infections as well as to determine the role of HPV testing in the screening, prevention, and control of cervical cancer. This study provided important information on the prevalence of HPV genotypes, which will be used in future nationwide studies.

**Keywords:** Human papillomavirus, HPV, Genotyping, Iran

## O117 - 1084: INVASIVE ASPERGILLOSIS AFTER LIVER TRANSPLANT SURGERY

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**Background and Aim:** Invasive aspergillosis after liver transplant surgery has resulted in high morbidity and mortality in the recipients. This study was undertaken to determine the incidence rate of this infection in liver transplant recipients, in a unique center for liver transplant in Nemazee hospital, Shiraz university of Medical Sciences, Iran.

**Methods:** Four hundred fifty-six recipients who underwent liver transplant were followed for Aspergillus infections by real time PCR. Blood samples were collected from the patients with suspected invasive aspergillosis, according to clinical signs and symptoms and examined by real time PCR. Clinical samples from the recipients were collected and evaluated by routine microscopic and culture examination.

**Results:** Recipients received fluconazole after surgery as prophylaxis and also received corticosteroid drug, and tacrolimus. The female-to-male ratio was 173:283 (mean age, 30.1 years). Aspergillosis was detected in 20 recipients (4.4%) by routine and molecular methods. Of whom 13 recipients died (65%) The etiologic agents were Aspergillus flavus and Aspergillus fumigatus. Infections occur during the three weeks to 6 months of post-transplantation.

**Conclusion:** Liver recipients are susceptible to invasive aspergillosis due to the use of systemic immunosuppression. In this study, invasive aspergillosis was associated with poor outcomes. Early diagnosis using molecular methods and treatment can provide the best outcome for such patients.

**Keywords:** liver recipient, aspergillosis, tacrolimus

The Mechanisms of Pathogenicity in Infectious Diseases

## O118 - 204: GENETIC STUDY FOR THE ROLE AND PREDICTIVE CONSEQUENCE OF CERTAIN CYTOKINES IN HEPATITIS B IRAQI PATIENTS

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**Background and Aim:** Abstract Hepatitis B virus (HBV) infection is a serious and common infectious disease of the liver, HBV infection is endemic, particularly in developing countries, and is a serious public health problem. Cytokines and regulatory molecules play a fundamental role in the immunopathogenesis of HBV infection. The gene loci for cytokines are defined, and polymorphisms of these genes are suggested to influence the outcome of HBV infection. In our study we revealed that there are elevated in Aspartate transaminase (AST), Alanine transaminase (ALT) and Bilirubin (Bil) among HBV patient than control group. IL–4 rs2070874 SNP Genotypes among patients with HBV was ONLY 68 positive to PCR results while in contrast it is only 9 within control group. The highest ratio of genotype in both groups was in CC as 36 (52.9%) in patients and 5 (55.6%) in control. Allele frequency on other hands describe as follow; in HBV and control group for C 72 (63.7%), 11 (61.1%) while for T 41 (26.3%) and 7 (38.9%) respectively. Genotypes of IL–10 rs1800872 SNP among patients was in AA as 43 (62.3%) in patients and 13 (76.5%) in control. On other hands Allele frequency describe as follow; in HBV and control group for A 106 (76.8%), 29 (85.3%) while for G 32 (23.2%) and 5 (14.7%). IFN-γ (rs2069705 SNP) Genotypes among patients with HBV was in AG as 39 (28.8%) in patients and 10 (47.6%) in control with GG. Allele frequency. Moreover, describe as follow; in HBV and control group for A 61 (33.3%), 28 (66.7%) while for G 122 (66.7%) and 28 (66.7%)

**Methods:** Healthy control group This study has done on population consisted of 87 patients with chronic hepatitis B (46 men and 41 women), and 63 healthy controls (39 men and 24 women) aged between 22 and 67 years. Patients were recruited from the Main Hospital in Al-Hillah City, Educational Hospital, during a 13 months. Patients with chronic hepatitis B were HBV DNA (+)

by PCR, HBsAg (+), anti-HBc (+), anti-HBe (+). These samples have collected from Iraqi populations were arbitrarily. Blood Sampling: Approximately five milliliters of venous blood have collected from each patient in the study. The blood was divided into two parts: one part (about three milliliters) was collected into EDTA containing tubes. The second one of the blood was placed in gel tube for thirty minutes, then transferred to plain tube after that serum was obtained by centrifugation for 10 min at 3000×g the sera were separated, aliquoted and then frozen at −40 ◦C avoiding Freeze/thaw cycles of the samples. The collected serum and kept in the freezer until it was used for immunoassay. Serology Serum concentrations of aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), and gammaglutamyltransferase (GGT), total bilirubin. Cytokines Levels of IL-10, IFN-γ and IL-4 were measured with Elisa. The upper limit of ALT activity was set at 35 IU/L, of AST at 37 IU/L, of ALP at 104 IU/L, of GGT 38 IU/L and of total bilirubin at 1.00 mg/dL.

**Results:** IFN-? (rs2069705 SNP) Genotypes among patients with HBV was in AG as 39

**Conclusion:** ok

**Keywords:** Hepatitis, cytokines, PCR, IFN, SNPs, IL-10, IL-2

# O119 - 272: NEISSERIA GONORRHOEAE ENDOTOXIN AND SPLEEN'S MRNA SPLICING OF XBP-1 GENE IN C57 MICE

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**Background and Aim:** Neisseria gonorrhoeae LOS, is an interfering factor due to correct folding of proteins in the endoplasmic reticulum and lead to the activation of UPR in order to maintain homeostasis of living in fatal cell stress. Homeostatic responses in the body by the UPR which induced by LOS activates, require splicing and translation of the transcription factor XBP-1 (X-Box Binding Protein-1) in IRE1α (Inositol-requiring enzyme 1) pathway. Identification of IRE1α pathway activators are so important to improve the knowledge of mechanisms due to bacterial pathogenesis.

**Methods:** Preparing N. gonorrhoeae and pure LPS, bacterial lipopolysaccharide was purified applying "Leive's" method. Along with control group, LOS and LPS were injected into C57 mice intraperitoneally. In compliance with regular intervals injections, mice were sacrificed and their spleens were isolated in order to extract total RNA. cDNA was synthesized from yielded RNA by Reverse transcriptase reaction by RT-PCR for XBP-1 gene isoforms detection.

**Results:** Observation of spliced XBP-1 mRNA gene derived from RT-PCR, may approve the activation UPR biosensors' in the exposure of Neisseria specific endotoxin. Achieving expected response in order to exposure with LOS, indicates that induction of the UPR in the human body by different endotoxin's structures.

**Conclusion:** Identification of the different components of the UPR system due to exposure of Neisseria endotoxin has given us a new direction in identifying the mechanism of pathogenicity of the bacteria. Each components of the system will track and target for diagnostic and therapeutic purposes.

**Keywords:** Neisseria gonorrhoeae, endotoxin, UPR, IRE-1, XBP-1

# O120 - 274: MOLECULAR STUDY OF ANTI-ENDOTOXIN EFFECTS OF ENDOCRINE HORMONES IN C57 ANIMAL MODEL BASED ON THE FREQUENCY OF PHYSICAL PARAMETERES

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**Background and Aim:** Septic shock is still the leading cause of death triggered by LPS of Gram-negative bacteria. The shock led to tension in endoplasmic reticulum (ER) and activate homeostasis responses in eukaryotic cells called UPR (Unfolded Protein Response). Conducted researches revealed that such secreted hormones originating from endocrine system of the body with antioxidant effects, are influenced by circadian rhythms. These hormones reduce lethal stress of ER instigated by activation of UPR and show protective effects against endotoxin shock caused by LPS of Gram-negative bacteria

**Methods:** Performing the test, Pseudomonas aeruginosa endotoxin extracted, purified and then injected intraperitoneally into the abdominal cavity of C57 mouse. The initial and late level of anti-endotoxin hormones will be measured before and after exposing with different physical parameters including sound, temperature, light and humidity. On the other hand, the changes in the expression levels of genes which are responsible for anti-endotoxin effects of these hormones, will be evaluated by molecular technique.

**Results:** Resulting in an increase or decrease in the production of hormones with anti-endotoxin effects, which have been induced by physical parameters to secrete more or less, reduce or rise up activity of their responsible genes development will be shown by applying sensitive molecular techniques in susceptible animals.

**Conclusion:** As a result of expected results, it is suggested that, a natural treatment would be available for septic shock using secretion of anti-endotoxin hormones which are stimulate to secret by physical parameters.

**Keywords:** UPR, LPS, Circadian Rhythms

# O121 - 297: THE EFFECT OF THE PSEUDOMONAS AERUGINOSA LPS ON THE UNFOLDED PROTEIN RESPONSE (UPR) IN C57 MICE

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**Background and Aim:** Gram-negative bacteria endotoxin (LPS), activates unfolded protein response and as a result, leads in endoplasmic reticulum stress and septic shock through eukaryotic cells. The UPR's activation is involved with stress response in the endoplasmic membrane of cells and has a significant role in the homeostasis. This is the result of a stress-induced responses received from endoplasmic reticulum biosensors that whether help cell survival or lead in programmed cell death. Because of the importance of calcium ions in the apoptotic response to the UPR, we decided to examine cell death that is stimulated by gram-negative bacteria endotoxin within calcium channel blockers.

**Methods:** Due to septic shock occurrence, Intraperitoneal injection of Pseudomonas aeruginosa LPS is performed in 2 groups of C57 mice which are treated with two types of calcium channel blocker drugs. At specified intervals, the expression of genes -involved in the UPR inflammatory response- will be evaluated.

**Results:** Calcium channel blockers are expected to prevent cell death related to the irritation caused by Pseudomonas aeruginosa endotoxin. Results could be interpreted based on different electrophoretic pattern in order to difference in gene expression.

**Conclusion:** The results will introduce new strategies to manage bacterial endotoxic septic shock and hopefully improve our knowledge about microbial mechanism of pathogenesis.

**Keywords:** Pseudomonas aeruginosa ,LPS , UPR, Ca Channel blocker

# O122 - 306: FIBRINOGEN AND MUCIN BINDING ACTIVITY OF EF0737, A NOVEL RECOMBINANT PROTEIN OF ENTEROCOCCUS FAECALIS

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**Background and Aim:** Enterococcus faecalis have emerged as a major cause of human infections. This opportunist pathogen expresses surface protein components that have several functions in infection process, including bacterial attachment, autolytic activity and induction of immune responses. EF0737, a novel cell wall associated protein, may play an important role in pathogenesis of E. faecalis. This study aimed to clone and express EF0737 and demonstrate its interaction with plasma proteins and patients' sera.

**Methods:** The full length of ef0737 gene was cloned in PTZ57R/T cloning vector and subcloned in pET21a expression vector. Recombinant protein expressed in Escherichia coli Origami (DE3) and was purified. Confirming of recombinant protein was evaluated by Western blot using anti-His tag monoclonal antibody. Interaction of the recombinant protein with plasma proteins and patients' sera were examined by Western blot.

**Results:** The ef0737 gene was successfully cloned and expressed in Origami host. Binding activity was observed between the purified EF0737 recombinant protein and fibrinogen and mucin among other plasma proteins. Moreover, reaction was also observed between the purified product and sera obtained from patients diagnosed with E. faecalis infection.

**Conclusion:** The reaction observed between purified product of EF0737 and fibrinogen, mucin and sera from patients diagnosed with E. faecalis infection suggest that EF0737 might play important role in pathogenesis of infections caused by E. faecalis. However, more comprehensive characterization of this novel protein may give better understanding of host pathogen interaction.

**Keywords:** Enterococcus faecalis, EF0737, Fibrinogen, Mucin, Pathogenesis

# O123 - 612: QUALITY EVALUATION OF IDENTIFICATION OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS BASED ON THE EXPRESSION OF HLA, LUKED, SEI, AND HLG VIRULENCE GENES IN DIABETIC FOOT INFECTION SAMPLES IN MAZANDARAN

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**Background and Aim:** Methicillin resistant Staphylococcus aureus is a common cause of nosocomial infection, especially in patients with diabetic foot infection(DFI). Antibiotic resistance and multiple virulence factors of this bacterium, lead to failure of the treatment, the severity of the infection and ultimately lower limb amputations in patients with diabetes. This research was carried out to quality evaluation of identification the mecA, hla, lukED, sei, and hlg genes and detection of antibiotic resistance pattern in S. aureus isolated from patients with diabetic foot infections.

**Methods:** Samples were collected from 30 patients with diabetic foot infections, and S. aureus was isolated based on cultivation and biochemical properties, and antibiotic resistance pattern. After the DNA extraction, molecular evaluation of isolates was carried by use of five specific primers of these genes by PCR method.

**Results:** Frequency of hla, lukED, sei, and hlg genes in methicillin resistant isolates by 100% identification, were 100%, 100%, 100%, 71.4%, and 64.2% respectively. In addition to methicillin, the most resistance of isolates was obtained to Clindamycin and Erythromycin (98.2%), Ciprofloxacin (92.8%), Oxacillin, Doxycycline, and Tetracycline (78.6%).

**Conclusion:** Virulence genes; hla, lukED, sei, and hlg, are specific genetic markers in identification of S. aureus and diabetic foot infection grade based on expression of these genes, and methicillin resistance gene (mecA) is a suitable criterion evaluation of the antibiotic resistance in isolates. Diagnosis of the infectious agent by PCR method and an appropriate on time antibiotic therapy, is indispensable to prevent amputation in diabetic patients.

**Keywords:** Antibiotic resistance, Diabetic foot infection, methicillin resistance, Staphylococcus aureus, and Virulence genes

# O124 - 760: STUDY RELATION OF HELICOBACTER PYLORI INFECTION AND MITOCHONDRIAL DNA COMMON MUTATION IN COLORECTAL CANCER

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**Background and Aim:** Colorectal cancer (CRC) is a complex multistep multifactorial event, in which the role of Helicobacter pylori infection in carcinogenesis has been established in recent years. Mitochondrial DNA with 4977 bp deletion mutation (mtDNA4977) is a common type of mtDNA alteration in humans. In the present study, we explored the associations between H. pylori infection and mitochondrial DNA common mutation in colorectal cancer.

**Methods:** We have analyzed H. pylori cagA and mtDNA4977 deletions by PCR in cancer and their adjacent non-cancer tissues in 65 CRC patients.

**Results:** The rate of H. pylori cagA positivity was 75.38 % in cancer tissues and 41.53% in their adjacent non-cancer tissues ($p < 0.001$). In addition, the prevalence of mtDNA4977 deletions was 81.53% (53/65) in cancer tissues and 47.69% (31/65) in their adjacent non-cancer tissues ($p < 0.001$). The detection rate of mtDNA4977 deletions was significantly higher in specimens with H. pylori infection than in those without H. pylori infection ($P < 0.05$).

**Conclusion:** In conclusion, the present study suggests that mtDNA4977 deletions and H. pylori cagA may represent additional and synergic major risk factors for the pathogenesis of CRC and its complications.

**Keywords:** Helicobacter pylori, mtDNA4977 deletions, colorectal cancer

# O125 - 774: MOLECULAR EVALUATION OF RELATION CHLAMYDIA TRASHOMATIS INFECTION AND MTHFR C677T MUTATION IN EMBRYONIC ABORTION

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**Background and Aim:** The objective of this study is to evaluate MTHFR C677T mutation and its relationship with Chlamydia trachomatis infection in Recurrent pregnancy loss(RPL).

**Methods:** Here we examined the prevalence of MTHFR C677T mutation and Chlamydia trachomatis infection by PCR in 68 women without abortion and in 67 women with abortion. All of case completed a questionnaire including comprehensive information, such as abortion history, abortion in the family, age, weight, blood group, type of marriage, smoking and Statistical analysis was performed using Epi Info software by x2 test.

**Results:** Among patients with clinical symptoms, 16.41% were positive for Chlamydia trachomatis and in the control group, 5.88 % were positive for Chlamydia trachomatis. On the other hand, ARMS-PCR results in the MTHFR C677T genotypes showed that 42% of patients were with genotype CC, 48% of people with genotype CT and 10% with TT genotype. In the control group were genotype CC (64%), CT (32%) and TT (4%). Statistical analysis at the MTHFR C677T genotypes showed that the frequency of TT genotype was higher in patients with RPL than healthy individuals and the difference was statistically significant.

**Conclusion:** Therefore, these factors can use as a molecular marker for early detection and treatment in abortion.

**Keywords:** Recurrent pregnancy loss, Chlamydia trachomatis, MTHFR C677T mutation

# O126 - 776: MOLECULAR INVESTIGATION OF RELATION BETWEEN UREAPLASMA UREALYTICUM INFECTION AND MTHFR A1298C MUTATION IN HUMAN ABORTION

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**Background and Aim:** Abortion as a multifactorial disease, often infection with Ureaplasma urealyticum considered as an important factor. The purpose of this study was to investigate contamination with U. urealyticum and MTHFR A1298C mutation in abortion for early diagnosis and treatment.

**Methods:** To investigation this topic, from 115 women (47 as experimental group and 68 as control samples) blood samples were taken from women in Karaj and then contamination of U. urealyticum and MTHFR A1298C mutation detected by PCR.

**Results:** The 47 blood samples isolated, the 19 patients (42/40%) were infected with U. urealyticum, but the 68 healthy or control group blood samples, 7 people (29/10%) were infected with bacteria. In addition, the frequencies of three genotypes AA, AC, CC polymorphism MTHFR A1298C in the patient group was, 17 (0.36), 22 (0.47), 8 (0.17) and in the control group 47 (0.69), 17 (0.25), 4 (0.06), respectively.

**Conclusion:** The results showed that there was a significant relationship between genotype polymorphisms patients and controls. The study showed no significant difference between MTHFR A1298C genotype in infected and non-infected samples.

**Keywords:** Abortion, Ureaplasma urealyticum , MTHFR A1298C mutation

# O127 - 780: INVESTIGATION OF RELATIONSHIP BETWEEN HELICOBACTER PYLORI AND MITOCHONDRIAL MTDNA4977 DELETION IN CARDIOVASCULAR DISEASES

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**Background and Aim:** Helicobacter pylori has been recently introduced as an important etiological factor for Cardiovascular disease (CVD) development. Mitochondrial DNA with 4977 bp deletion mutation (mtDNA4977) is a common type of mtDNA alteration in CVD.

**Methods:** In this case-control study, which was conducted on 502 patients, 256 hospitalized patients were selected from CCU ward as cases and 280 healthy peoples as controls. Using standard questionnaire, demographic and clinical data were gathered. The detection of mtDNA4977 and urease C gene has been performed by using polymerase chain reaction (PCR) protocol.

**Results:** The rate of H. pylori ureC positivity was 76.17 % in patients and 40.71% in controls ($p < 0.0001$). In addition, the prevalence of mtDNA4977 deletions was 51.95% (133/256) in patients and 49.28% (138/280) in controls ($p < 0.001$). A significant higher incidence of H. pylori ureC was observed in CVD patients with respect to healthy subjects.

**Conclusion:** In conclusion, the present study suggests that Helicobacter pylori may represent additional and synergic risk factors for the pathogenesis of CVD and its complications.

**Keywords:**CVD, H. pylori , mtDNA4977

# O128 - 1169: TOXIN ANTITOXIN SYSTEM AS AN ATTARACTIVE TARGET IN PATHOGENIC ENTEROCOCCUS FAECIUM AND ENTEROCOCCUS FAECALIS

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**Background and Aim:** Toxin-antitoxin system is a regulatory system where two sets of genes encode the toxin and its corresponding antitoxin. The prevalence of TA systems in independently clinical isolates of Enterococcus faecium and Enterococcus faecalis were determined, then the dominant TA systems were identified, different virulence genes in E. faecium and E. faecalis are surveyed and subsequently the level of expression of virulence and TA genes were determined.

**Methods:** Firstly, Bacterial Isolates. A total of 79 clinical isolates of E. faecalis and E. faecium were identified. Then, DNA extraction and Polymerase Chain Reaction (PCR) Purification of virulence genes from agarose gel. All PCR products were analyzed by 1% agarose gel electrophoresis and finally, Sequence analysis.

**Results:** The MazEF and HigBA TA loci were dominant TA systems and were prevalent in all E. faecalis and E. faecium strains. The current research demonstrated the different prevalence of virulence genes which were more associated with biofilm formation in E. faecalis and E. faecium. The pilB, fms8, efa and sgrA were prevalent in all the isolates and should have more pathogenicity. The current research demonstrated that the mazEF TA system is a potent target in pathogenic E. faecalis and E. faecium.

**Conclusion:** This study describes and validates a novel target, mazEF, for the eradication of pathogenic E. faecalis and E. faecium. Also the higBA present in all strains should be further investigated. Furthermore, the occurrence and potential for deactivation of the mazEF TA system in other drug-resistant, pathogenic bacteria remains to be investigated.

**Keywords:** Toxin-antitoxin systems- virulence genes- biofilm formation

The Nosocomial Infections

## O129 - 120: DETECTION OF VIRULENCE GENES IN ENTEROCOCCUS FAECALIS AND ENTEROCOCCUS FAECIUM ISOLATED FROM CLINICAL SPECIMENS IN IRAN

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**Background and Aim:** Enterococci rank among leading causes of nosocomial and community acquired infections. The purpose of the present study was to investigate the presence of virulence factors in Enterococcus faecalis and E. faecium strains isolated from clinical samples in Iranian hospitals.

**Methods:** Clinical enterococcal isolates were obtained from hospitals in Iran. Isolated enterococci were identified phenotypically followed by antibiotic susceptibility testing. PCR was done for the detection of genus, species-specific targets, and potential virulence genes.

**Results:** Of 152 enterococcal isolates 82 (53.9%) and 53 (34.8%) were E. faecalis and E. faecium, respectively. Of 152 isolates, 63.3% were positive for gelE, and 52.6%, 48.6%, 50%, and 43.3% of isolates were positive for cpd, asa1, ace, and esp, respectively.

**Conclusion:** The virulence genes were more common in E. faecalis isolates and E. faecalis had more potential pathogenesis for initiating an infection; though because of E. faecium higher antibiotic resistance, we have been facing higher E. faecium infections in hospitalized patients.

**Keywords:** Enterococcus faecalis, Enterococcus faecium, virulence genes

# O130 - 171: VIRULENCE GENE EXPRESSION ANALYSIS OF STAPHYLOCOCCUS AUREUS IN TREATMENT WITH THYMUS DAENENSIS L ESSENTIAL OIL

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**Background and Aim:** Staphylococcus aureus is an important human and animal pathogen that is responsible for a range of diseases that vary widely in clinical presentation and severity. Pathogenicity of this organism is attributed to various virulence factors. Even though, Thymus daenensis essential oil (EO) is well known for its antimicrobial activity against several important pathogens including S. aureus, the precise mechanism of antimicrobial action is not completely known. According to this fact the aim of present study was to evaluate the virulence gene expression of S. aureus when treated with sub-minimum inhibitory concentrations (sub-MICs) of T. daenensis EO.

**Methods:** The inhibition potential of Quorum sensing (QS), NorA efflux pump and exopolysaccharide production of T. daenensis EO was evaluated by quantitative Real-Time PCR (qRT-PCR) analysis. Target genes in present study were RNAIII (for QS), norA (for efflux pump) and icaA (for exopolysaccharide). 16S rRNA gene was used as reference for normalization of results. The relative gene expression was analyzed using the 2-ΔΔCT method.

**Results:** The MIC value of EO for S. aureus ATCC 25923 was 0.5 µl.ml-1. The results of qRT-PCR analysis showed that at MIC/2 (0.25 µl.ml-1) concentration, this EO was able to decrease more than a 2.5 fold in the gene expressions of the all three investigated genes.

**Conclusion:** The production of exopolysaccharide, QS functional molecule and NorA efflux pump protein in S. aureus was decreased by T. daenensis EO. These data suggest that T. daenensis EO may be useful for the treatment of S. aureus infections.

**Keywords:** Staphylococcus aureus, Thymus daenensis essential oil, Virulence factor

# O131 - 192: A SYSTEMATIC REVIEW AND META-ANALYSIS OF COCKROACHES (INSECTA: BLATTARIA) CONTAMINATION TO MEDICALLY FUNGI

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**Background and Aim:** Fungal infections have emerged worldwide. Cockroaches have been proved vectors of medically fungi.

**Methods:** A systematic meta-analysis review about cockroach fungal contamination was investigated. Relevant topics were collected between January 2016 and January 2017. After a preliminary review among 392 collected papers, 156 were selected to become part of the detailed systematic meta-analysis review.

**Results:** Cockroaches contaminated to 38 fungi species belonging to 19 families and 12 orders. About 38, 25 and 13 fungal species were recovered from the American, German and brown-banded cockroaches, respectively with a variety of medical importance. Except the fungi isolated from German and brown-banded cockroaches, 15 species have been isolated only from the American cockroaches. The global world mean and trend of cockroach fungal contamination were 84.1 and 50.6-100%, respectively in the human dwelling environments. There is a significant difference between cockroach fungal contamination in the urban and rural environments ($P < 0.05$) without a significant difference between hospital and household environments ($P > 0.05$). The external and internal cockroach fungal contamination is more dangerous than entire surfaces, while the internal is more dangerous than the external surface. The German and brown-banded cockroach fungal contamination are more dangerous than the American cockroaches in the hospital environments.

**Conclusion:** The study indicates that globally cockroach fungal contamination has been increased recognizing as agents of human infections and associating with high morbidity and mortality in immune-compromised patients. These facts, along with insecticide resistance emergence and increasing globally cockroach infestation, reveal importance of cockroaches and need for their control more than ever.

**Keywords:** Blattella germanica, cockroach fungal contamination, fungal infection, Periplaneta americana, Supella longipalpa

# O132 - 1000: MOLECULAR TYPING OF STAPHYLOCOCCUS AUREUS ISOLATES FROM PATIENTS, PERSONNEL AND SURFACES IN SHAHID MOTAHARI HOSPITAL BY SCCMEC AND AGR TYPING METHODS

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**Background and Aim:** After burn injury, many complications can occur and one of the most important of them is Burn wound infections. From the past times up to nowadays, the major cause of burn wound infections is Multi-drug-resistant Staphylococcus aureus including MRSA strains. The aim of this study is to find the common types of S. aureus strains circulating in the burn hospital in tehran by agr and SCCmec typing methods.

**Methods:** A total of 208 samples of Staphylococcus aureus from Shahid Motahari hospital in Tehran has been collected from August 2015 to August 2016. The isolates were identified and confirmed using standard biochemical methods and polymerase chain reaction (PCR) for the nucA gene. SCCmec and agr typing methods were used for genotyping of the S. aureus isolates.

**Results:** Frequency of MRSA isolates between patients, staff and surfaces were %64.22 (n=79), %50 (n=7) and %73.33 (n= 22), respectively. Among 108 MRSA isolates, the most frequent SCCmec type was SCCmec type III (75%) followed by SCCmec type I (20.37%) and SCCmec type IV (1.85%). Although (2.77%) of MRSA isolates were nontypeable by this method. The frequency of agr type I, II and III was 78.44%, 10.17% and 4.79%, respectively and the other (6.57%) isolates were nontypeable.

**Conclusion:** In this study, SCCmec type III strains mostly were isolated from personnel and patients. This finding confirmed by results of agr typing. Finally, our hypothesis indicates that a limited number of bacterial colons are circulated in the burn unit in this hospital.

**Keywords:** SCCmec typing, agr typing, MRSA, Methicillin Resistant Staphylococcus aureus, burn center

## O133 - 1141: THE FREQUENCY OF MYCOPLASMA PNEUMONIAE AMONG PATIENTS WITH ATYPICAL PNEUMONIA.

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**Background and Aim:** Mycoplasma pneumoniae is a major cause of community-acquired pneumonia with 15–20% and up to 40% cases in adults and children, respectively. We aimed to investigate the frequency of M. pneumoniae among atypical pneumonia of patients who are acquired from the community and to determine a practical approach to the diagnosis of these patients.

**Methods:** Over a period of Five months between January and June 2017, throat swab samples were obtained from 106 outpatients (40 men and 66 women; mean age 52.20 years) who were diagnosed with acute respiratory symptoms and admitted to the Mostafa Khomeini Hospital, Tehran, Iran. M. pneumoniae was diagnosed in throat swab samples by culture and confirmed by phenotypic tests such as Glucose fermentation, Arginine fermentation, Hemolysis, Hemadsorption. PCR method was performed on amplification of gene fragment coding for P1 adhesion.

**Results:** Twenty-seven patients (25.4%) (12 men and 15 women ratio of 0.80:1) were considered positive for M. pneumoniae by culture and phenotypic tests. The major clinical signs in patients were shortness of breath (64%), Chest pain (36%), Lethargy (43%), cough with sputum (50%), Sore throat (25%), Headache (21%). Twenty-eight (26.4%) of 106 throat swab samples gave positive results by using the PCR method.

**Conclusion:** These data reflect the overall high prevalence of this atypical pathogen among adult patients with CAP.

**Keywords:** Mycoplasma pneumoniae, community-acquired pneumonia, PCR, Frequency, phenotypic tests, Culture.

Zoonoses and veterinary Microbiology

## O134 - 23: EVALUATION OF SOME EPIDEMIOLOGICAL FACTORS OF CUTENESS ANTHRAX IN PATIENTS WERE ADMITTED TO THE HEALTH CENTERS IN MASHHAD FROM 2003 UNTIL 2013

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**Background and Aim:** Anthrax is the zoonotic disease caused by Bacillus Anthracis which is a gram positive immobile cylindrical spore making bacterial and its spores can be find in soil. Due to important of cutaneous anthrax and high expenses of it treatment.

**Methods:** This is a cross sectional descriptive study based on the files of 204 patients with cutaneus anthrax were admitted to the health centers of Mashhad from 2003 until 2013.Data were analyzed by a typical test K2.

**Results:**53% of patients were male (108 cases) and 47% female (96%).The most common age group was between 40-49 years old. The most common rout of transmission was from a close contact with livestock (54%) and the most common site of ulcerations were on the fingers (72%).Housewives acquired disease more than other groups (38. 7%). Most of the cases were admitted in summer times (46.6%) and the least cases in winter (4. 4%). Most of the patients had a single lesion (85.8%). Mortality was 0.5%.

**Conclusion:** Results showed it can be recommended the more attention to is needed animal health issues and their vaccination, enforcement of quarantines system for imported livestock by veterinary offices and education of vulnerable groups such as housewives, ranchers, farmers and residents of rural areas.

**Keywords:** Anthrax, Epidemiology, Bactria

# O135 - 97: PRODUCTION OF MPT-64 RECOMBINANT PROTEIN FROM VIRULENT STRAIN OF MYCOBACTERIUM BOVIS

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**Background and Aim:** Objective: Tuberculosis (TB) is a zoonotic infectious disease common to humans and animals which has been caused by a rod shaped, acid fast bacterium, called Mycobacterium bovis. The rapid and sensitive detection is a great change for TB which has been endorsed by specific antigens. The virulent strains of TB complex Mycobacterium have 16 different Regions of difference (RD) in their genome which encode some important antigens. The MPT-64 (Major Protein of M. bovis 64) is one of the main immune-stimulating antigens which encode by RD-2 region. The aim of the present study was cloning, expression and purification of MPT-64 as a potent antigen of M. bovis in a prokaryotic system for the usage in the future diagnostic studies.

**Methods:** The antigenic region of MPT-64 gene has been detected by bioinformatics methods, cloned into PQE-30 plasmid and expressed in the E. coli M15 with induction by IPTG. The expressed protein was analyzed on SDS-PAGE, and purified with Ni-NTA column. Finally, its biological activity has been confirmed in western blotting by specific antibodies.

**Results:** Data showed the successful cloning of MPT-64 gene (as a … bp segment) in expression vector. The MPT-64 recombinant protein was ideally expressed and purified as a 24 KDa protein.

**Conclusion:** The result of this study indicated that recombinant MPT-64 protein has been successfully expressed and purified in a prokaryotic system. This protein could be used for differential diagnosis of pathogenic and non-pathogenic Mycobacterium, in suspected bovine tuberculosis.

**Keywords:** Mycobacterium bovis, MPT-64 protein, recombinant protein, cloning

# O136 - 183: THE MOST COMMON SPOLIGOTYPE OF MYCOBACTERIUM BOVIS ISOLATED IN THE WORLD AND THE RECOMMENDED LOCI FOR VNTR TYPING; A SYSTEMATIC REVIEW

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**Background and Aim:** Mycobacterium bovis is neglected zoonosis that epidemiological studies due to find source of infection, control and prevent spread of this bacterium is very important. Spoligotyping and VNTR are two molecular methods for M. bovis typing. The aim of this study was to investigate the most common spoligotypes M. bovis circulating around the world and introduced highly and poorly loci for VNTR typing.

**Methods:** We used different databases such as ISI, ISC, Google scholar, science direct, Elsevier and PubMed. Searches were performed by key words, including: M. bovis, MIRU –VNTR, spoligotyping, discrimination power.

**Results:** Seventy articles were found with this key word during 2005 to 2016 and thirty-one articles had inclusion criteria. Spoligotype SB0120 was the most common circulating type on several continents: Asia (Iran), Europe (France and Italy) and Africa (Zambia and Algeria). SB0121 existed in Europe (Spain, Portugal), Africa (Algeria) and America (Mexico and Brazil). SB0140 detected in Asia (China), Europe (Ireland) and America (Mexico). QUB3232 and QUB11b were more appropriate loci among the loci with high discriminatory power. MIRU 10 and MIRU4 were among the loci with poor discriminatory power.

**Conclusion:** Considering published data SB0120 and SB0121 are predominant spoligotypes of M. bovis circulating among cattle around the world.

**Keywords:** Mycobacterium bovis, Spoligotype, VNTR

# O137 - 460: OPTIMIZATION OF MULTILOCUS SEQUENCE TYPING (MLST) ANALYSIS IN THE CLASSICAL PCR MACHINES FOR GENOTYPING OF MYCOPLASMA AGALACTIAE

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**Background and Aim:** Mycoplasma agalactiae is the main causative agent of contagious agalactia (CA), a syndrome that causes mastitis, arthritis, conjunctivitis, pneumonia and is listed by the OIE (World Organisation for Animal Health). Some geographic regions are free of M. agalactiae infections, while it occurs sporadically or is endemic in others region. Iran remains a major world stronghold for agalaxy with numerous annual outbreaks.

**Methods:** This study is the first report of developing MLST method on the basis of Mycoplasma agalactiae Taliqan, Shiraz and Lorestan strains used in manufacturing Razi Agalactia Vaccine in Iran. To perform MLST analysis bacterial DNA was extracted by simple boiling method, then primers were designed based on the sequence proposed by the MLST database (https://pubmlst.org/magalactiae/). A universal PCR modified procedure was set in terms of temperature and concentrations of the contents for each locus.

**Results:** The results of this study showed, achievement of a universal PCR protocol, which is able to proceed simultaneously four different reactions in one PCR run, was the primary outcome of this research.

**Conclusion:** Considering the fact that cattle and sheep farming play an important role in the economy of the Iran, so it is recommended this method used for molecular identification of strains to other provinces and compare them with M. agalactiae vaccine strains.

**Keywords:** Mycoplasma agalactiae, PCR, MLST

## O138 - 739: STUDY OF ZOONOTIC BACTERIA IN GOLDFISH IN GUILAN PROVINCE

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**Background and Aim:** The emergence of diseases in aquaculture are as an agent increase production and economic development in many countries. These pathogens may be indigenous to the aquatic environment or from environmental pollution. Most of the early pathogens that can be transmitted from fish to humans Contact and handling of fish.

**Methods:** At each sampling of fish, 10 fishes were captured and transferred to the laboratory according to the principles of sterility. We used from (TSA) agar, (TCBS) agar, (MCA) agar, Bismuth Sulfate agar (BSA), GSP agar, Hicrom Agar, Blood Agar, Lewin Stein Agar. The abdominal surface of the fish was sampled by sterile loop from the kidneys and the liver. Samples were taken for 24 hours to One week was kept at 25 and 30 ° C incubators. After the growth of bacteria, checked out the biochemical tests of catalase, oxidase, staining of grams and before the sampling was done to obtain complete field information such as water factors, qualitative factors such as oxygen and temperature, nitrite, ammonia and ... BOD) Clinical observations, food (physical and chemical properties of food) and completion of relevant questionnaires.

**Results:** We were isolated bacteria as, Salmonella, Mycobacterium, Aeromonas hydrophila, Vibrio cholera, Pseudomonas aeruginosa, Escherichia coli, Klebsiella pneumoniae, Streptococcus from the goldfish specimens

**Conclusion:** The first step in solving this problem is the detection and the zoonosis of bacteria in the disease of gold fish, and then the prevention and observance of health principles before disease and treatment at the time of the disease is effective by antibiotics.

**Keywords:** gold fish, fish, bacteria, disease

# O139 - 838: SEROLOGICAL STUDY OF Q FEVER IN PATIENTS WITH FEBRILE DISEASE IN THE KHORRAMABAD CITY USING IFA

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**Background and Aim:** Q fever caused by infection with obligated intracellular gram negative bacteria which called Coxiella burnetii and can be named as an emerging disease in many countries including Iran, but because of few studies over this disease, it is not considered all over the world. Sometimes confused with other febrile diseases such as Influenza and Brucellosis. So far few studies have been studied in the case of Q fever in human communities in Iran. This study aimed to investigate the seroprevalence of Q fever in febrile patients referred to clinical laboratories in Khorramabad city.

**Methods:** In this study sampling started in October 2015 and has been continued until May 2016. Totally 100 blood samples were collected from febrile patients in privet and public hospitals and C. burnetii phase I and II IgG antibodies were measured by a commercial Indirect immunofluorescence (IFA) in sera from 100 febrile patients.

**Results:** Phase I and II IgG antibodies were detected in 38 samples (38%).

**Conclusion:** This study strongly shows that Q fever exists among patients with fever in Khorramabad. So it should be viewed as one of the possible causes in fever and nonspecific symptoms on pationts and it should be noted by health policy.

**Keywords:** IFA, Q fever, Khorramabad

**Panel presentation**

# ADAPTATION OF HUMAN GUT MICROBIOME TO BARIATRIC SURGERIES IN OBESE PATIENTS

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Obesity is one of the main public health problems and the fifth cause of mortality globally, as over 2.6 million people annually die due to obesity and its related complications. Recently, gut microbiota has been identified as a novel factor in human obesity and related metabolic risks. The common anti-obesity therapies such as diet therapy, behavioral and lifestyle modification, herbal medicines and pharmacotherapy are useful strategies which have effects on human microbiota composition. Bariatric surgeries have turned to be a popular therapeutic option for morbid obesity nowadays. Gut microbiota is supposed to be responsible as a part of the bariatric surgeries success. Roux-en-Y gastric bypass (RYGB) caused an increase in Proteobacteria and a decrease in Firmicutes. Laparoscopic sleeve gastrectomy (LSG) led to milder intestinal microbiota alteration compared to RYGB. Fecalibacterium prausnitzii species with anti-inflammatory properties increased after LSG and RYGB. Bariatric surgeries-induced weight loss may be partly due to the effect of gut microbiota modifications caused by surgical procedures. However, more and deeper explorations are needed to investigate the long-term effects of different bariatric surgeries on composition of gut microbiota. In addition, the effects of pre-surgical gut microbiota composition on losing weight and maintaining weight loss should be investigated.

# THE GUT MICROBIOTA-BRAIN AXIS

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A bidirectional communication between the brain and gut exists that is referred to as the gut-brain axis. The gut-brain axis plays an important role in maintaining homeostasis and its dysfunction has been linked to various psychiatric and non-psychiatric disorders.
This bidirectional interaction is important not only in normal gastrointestinal function but also plays a significant role in shaping higher cognitive function such as our feelings and our subconscious decision-making. Moreover, modulation of the gut-brain axis is also linked to the stress response and altered behavior with the microbiome being an important factor in the gut-brain axis communication network. The gut-brain axis uses four major information carriers for the communication between the gut and the brain: neural messages carried by vagal and spinal afferent neurons, immune messages carried by cytokines, endocrine messages carried by gut hormones and microbial factors that may directly reach the brain via the blood stream but canal so interact with the other three transmission pathways. Proposed mechanisms and pathways of the microbiota-gut-brain axis: Gut microbes synthesize a vast array of neuroactive molecules including neurotransmitters such as GABA (γ-Aminobutyric acid) and through fermentation, short chain fatty acids, which have effects on the nervous system. The gut microbiota also has direct and indirect effects of on the intestinal epithelium, local mucosal immune system, enteric nervous system and spinal and vagal nerves. Mediators and signals from these systems, including cytokines and neurotransmitters, modulate central nervous system (CNS) function and neuroendocrine responses such as the hypothalamus pituitary adrenal axis (HPA). In turn signals from the CNS and neuroendocrine system, including cortisol, catecholamines and acetylcholine, can alter gut microbiota composition. Therefore, the physiological roles of the symbiotic gut microbiota relate not only to the regulation of digestion at the gastrointestinal level but also extend to systemic immunity and brain function. It is clear that the gut microbiota can be a key regulator of mood, cognition, pain and obesity. Understanding microbiota-brain interactions is an exciting area of research which may contribute new insights into individual variations in cognition, personality, mood, sleep, and eating behavior, and how they contribute to a range of neuropsychiatric diseases ranging from affective disorders to autism and schizophrenia.

# ROLE OF GUT MICROBIOTA IN THE PATHOGENESIS OF METABOLIC DISORDERS

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As the prevalence of metabolic disorders increases dramatically, the importance of identifying environmental factors affecting metabolism control becomes greater. Recently, evidence has shown the associations between alteration in gut microbiota composition and metabolic disorders. The gut microbiota represents a novel potential therapeutic strategy for the treatment of diabetes and metabolic syndrome. Studies have indicated that there is a significant reduction of Firmicutes and Clostridia, while the relative proportion of Bacteroidetes and Betaproteobacteria increases in type 2 diabetic patients compared with the healthy persons. The abundance of butyrate-producing Clostridiales including Roseburia and Faecalibacterium prausnitzii, which have a protective role against T2DM, decreased significantly in patients with T2DM but the proportion of Clostridiales that do not produce butyrate increased. Since metabolic syndrome and T2DM are associated with low-grade inflammation, the inflammatory effective factors such as changing in gut microbiota can be a possible mechanism for them. The modulation of gut microbiotais a novel therapeutic strategy for glycemic control performed by known components such as prebiotics, probiotics, and some drugs like metformin. Probiotics may have anti-diabetic effects due to the compositional changes of the intestinal microbiota. Prebiotics, which are fermentable polysaccharides, promote SCFA production, stimulate the growth of beneficial bacteria such as Bifidobacterium and improve gut barrier function. Therefore, prebiotics improve gut permeability, decrease metabolic endotoxemia, reduce inflammation, and improve glucose intolerance. Future studies to identify specific bacterial species associated with metabolic phenotypes can help in providing therapeutic solutions by modulating the gut microbiota.

# INTESTINAL COLONIZATION OF THREE NDM-1-PRODUCING ENTEROBACTERIAL SP. IN AN INPATIENT

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Dissemination of carbapenemase-producing Enterobacteriaceae (CPE) poses a great clinical challenge in hospitals. Especially concerning are pathogens that produce NDM-type β-lactamase. Infections due to these organisms are severe, and have been associated with case fatality rate. Here we describe about importance of carriage of CPE and introduce one patient with gastrointestinal colonization with three different NDM-producing enterobacterial species which were isolated during their stay in the ICU of a general hospital in Tehran, Intestinal carriage serves as a reservoir of CPE and can promote cross-transmission in clinical settings, thus could be associated with increased nosocomial infections in hospitalized patients. We suggested that screening for intestinal carriage of CPE is of significant importance for the development of infection control measures.

# THE VOLUTION OF THE BORDETELLA SPECIES SINCE THEIR DISCOVERY

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The Bordetella genus comprises several species of which Bordetella pertussis and B. parapertussis are isolated from humans and are the most studied species since they cause whooping cough. They both originate from B. bronchiseptica, which infects several mammals and immune compromised humans. B. pertussis and B. parapertussis are monomorphic species. However, intensive pertussis vaccination revealed several types of isolates producing different antigens. B. petrii and B. holmesii are other species of unknown reservoir and transmission pattern that have been described in humans. It is still unknown whether these species are pathogens for humans or only opportunistic bacteria. B. trematum and B. ansorpii are only rarely isolated and only few characteristics are known. B. avium and B. hinzii, are two pathogens for birds and great issues for the poultry industry but only rarely isolates from humans. Other species were recently isolated from the environment. Loss of hundreds of genes during evolution is at the origin of several species, including the human B. pertussis and the avian B. avium species. Recent loss and inactivation of genes in B. pertussis and in B. parapertussis isolates suggest ongoing evolution.

# THE ROLE OF BIOLOGICAL RESOURCES CENTERS IN MEDICINE AND PHARMACEUTICAL SCIENCES

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BRCs are the 21st century culture collections developed to provide biological resources (including key organisms, cells, genes, and the related information) for the advancement of biotechnology, human health, and research and development in life sciences. The main mission of BRCs is contribution to conserve biodiversity and to provide access to natural and engineered biological resources. Governments and pharmaceutical industries are making large investments in recovering biological resources from nature and in investigating and engineering these resources. The BRCs not only prevent the lost of such huge investments but keep the results accessible to gain scientific, economic and medical benefits. In fact, the BRCs are the knowledge hubs for medical and pharmaceutical sciences and industries. As repositories of biological resources, BRCs are expected to operate in the management of intellectual property and promotion of international and national regulations on important issues such as biosecurity, biosafety and quarantine of biological resources. They also have great influence on relieving the tensions between commercial research and public science through their important role as international patent depositories. Providing a special service named “safe deposits” assures the pharmaceutical and biotechnology industries of long-term preservation of their valuable biological resources without loss of their ownership. Additionally, there is an ever increasing demand for authentic reference biomaterials as more clinical laboratories and pharmaceutical companies are adopting certification or accreditation as a means to demonstrate their quality and competence. BRCs have crucial roles in development of biomedical sciences by preserving and distributing validated biological materials for research and quality assurance in pharmaceutical manufacturers. Actually, they enhance the research productivity by providing high quality biomaterials and this in turn leads to a high rate of return in terms of cumulative development of scientific knowledge.

# PRODUCTION OF MICROBIAL PESTICIDES

Kamran Haghighi [1]

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As a result of increase in the population, more food is needed and consequently the methods of industrial production have developed a great deal. The agricultural industry has also used newer methods to be able to increase yield in food production. Thus, using chemical fertilizers and pesticides have increased drastically which has caused lots of dangers and problems for life on the earth. Excessive use of chemical pesticides creates lots of problems including the pollution of water and soil and therefore threatening the healthy cycle of food, changing the ecosystem and eliminating beneficial species, causing resistance in agricultural pests and creating secondary ones. One of the effective solutions for this problem is Biological methods and microbial products that can play an important role in this process. Using biological methods have always been effective in controlling pests but they have not been developed because of their higher costs comparing to chemical methods. The improving situation of industry and technology in recent years and also knowing the fact that using chemicals has more indirect costs has cleared the way for development of using microbial products and it is increasing every day. A verity of methods is used in biological field in order to control pests in agriculture. Microbial biopesticides are produced in different forms including bacteria, fungi, viruses and also their metabolites. Bacillus thuringiensis is one of the most successful microbial pesticides and it is produced in large amount in different formulations in commercial products.

# BIOACTIVE PEPTIDES, NEW APPROACHES TO DISEASE PREVENTION

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Food and health have always been closely linked together. Both foodstuffs and medicines have the power to heal bodily dysfunctions. The concept of viewing food as a remedy is ascribed to Hippocrates who, 2500 years ago, proclaimed: “Let food be your medicine, and medicine be your food.” This approach places food as nutraceuticals between pharmaceuticals and medical foods. It is consistent with the idea that the special food components we consume must show biological activity. Roles of bioactive peptides make them suitable candidates for the development of preventive and therapeutic agent. They are therefore suitable candidates for a new era of pharmaceutical products, especially with the heightened concerns of side effects of small molecule drugs and the increased attention to fresher and ‘greener’ foods and nutraceuticals possessing health-preventing or health-promoting properties. In our researches, new peptides were purified, identified and sequenced from protein hydrolysate. ACE-inhibitory (IC50) and antioxidant activity (DPPH and ABTS radicals scavenging, ferric reducing activity power (FRAP), lipid peroxidation inhibition, and cellular antioxidant activities), ACE inhibitory activity, ACE inhibition mechanisms, cytotoxicity and stability of new synthetic peptide are the subjects of these research. Also, the structure-function relation will be studied by synthesizing different peptide fragments or analogs to compare their activities by the original peptides.

# FIELD APPLICATION OF BIOREMEDIATION FOR CLEANUP OF OIL CONTAMINATION IN IRAN

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Oil spills are inevitable in petroleum industry due to mal-operation or accidents. Among cleanup methods; bioremediation is superior in comparison with physical and chemical techniques, according to economic and environmental measures. Following laboratory and pilot investigations, Research institute of petroleum industry (RIPI) has developed microbial remediation technologies which have been applied in different field projects. In the developed process, the potential of indigenous microorganisms is exploited to biodegrade hydrocarbons and convert them into biomass and carbon dioxide. By applying this method, contaminated soil and groundwater could be cleaned-up and recycled to natural conditions. The first field project was operated in Siri Island in which bioremediation of 2,000 tons of sludge-contaminated soil was successfully achieved through landfarming. In the next experience, 10,000 tons of soils contaminated with drilling waste in Khangiran district was cleaned by exploiting biopile technology. A similar project was also accomplished in Gachsaran district using biopile technology with passive aeration system. In these projects, phytoremediation was applied following microbial process to convert the cleaned area into green landscape. Further development in this field was achieved recently by stimulating microorganisms for cleaning underground contamination in Assalouyeh region using bioventing approach. In an overall view, development of bioremediation methods relying on native microorganisms and domestic capabilities, has led into cost-effective and operational technologies which are applicable for different contaminated sites in oil and gas industry.

# STATUS OF PERTUSIS VACCINE IN THE PRESENT AND FUTURE

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Pertussis is an acute infectious illness, caused by the Bordetella pertussis. Two forms of vaccine are in use, the whole-cell vaccine (wP), and the acellular vaccine (aP). Immunization with wP vaccines is effective and the vaccine is relatively inexpensive, but immunization has been frequently associated with adverse reactions such as redness and swelling at the site of injection, along with fever and agitation. Local reactions tend to increase with age and the number of injections. Concerns about the safety of whole-cell pertussis vaccines prompted development of acellular vaccines that are less likely to provoke adverse events because they contain purified antigenic components of Bordetella pertussis. Acellular pertussis vaccines are formulated with alum as the adjuvant, which promotes strong antibody responses but is less effective at inducing Th1-type responses crucial for effective bacterial clearance. Third generation pertusis vaccine is Outer membrane vesicles from B. pertussis. Outer membrane vesicles (OMVs) have been shown to be safe and protective in mice model of infection.

# INTERLEUKIN-33 (IL-33) AS A POTENTIAL IMMUNOTHERAPEUTIC STRATEGY FOR CHRONIC VIRAL INFECTIONS

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IL-33, is a member of the IL-1 family and is released by different cells. It is expressed by epithelial cells, endothelial cells, fibroblasts, and hepatocytes. The target cells of IL-33 are T helper 2 cells, basophils, dendritic cells, mast cells, macrophages, NKT (Natural Killer T) cells, and newly discovered natural helper cells/innate lymphoid cells which bearing the ST2 receptor. It has diverse and pleiotropic functions in various infectious and inflammatory diseases. It can be also released by damaged endothelial and epithelial cells at barrier sites, which functions as a damage-associated molecular pattern (DAMP) to trigger activated T-cells, either indirectly through proinflammatory cytokine production by innate immune system cells, or directly in a TCR-independent manner by binding to pattern recognition receptors (PRRs) on T-cells. Since IL-33 is classically described as a Th2 cytokine, and the control of viral infection is mainly dependent on a Th1-polarized immune responses so it might be expected that IL-33 probably plays a deleterious role during several viral infections. Recently, it was shown that IL-33 can promote both T helper 1 and T helper 2 immune responses depending on the type of activated cell, microenvironment, and cytokine network in various diseases. It is now known that IL-33 is also a crucial costimulator in the adaptive immune response, amplifying the responses of antiviral cytotoxic T lymphocytes (CTLs); IL-33 thus acts as an adjuvant. IL-33, as vaccine adjuvants, acts as a DAMP which enhances Th1 potency. Unlike other peptide-adjuvant conjugates that directly activate antigen presenting cells (APCs) through pattern recognition pathways, an IL-33-boosted vaccine was shown to activate TFH (T follicular helper) and NKT-cells *via* several mechanisms. In some chronic infections by HBV (Hepatitis B virus), Herpes viruses, HIV (Human immunodeficiency virus), IL-33 has been successfully used as an adjuvant for immunotherapeutic purposes.

# PERTUSSIS OMV AS A PROMOSING VACCINE CANDIDATE

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Current resurgence of pertussis disease, in spite of high vaccination coverage, during the last two decades (especially in 2008-2013 periods) in developed countries such as US, UK, Australia and other European countries with a significant mortality rate in infants is alarming and improved vaccines are demanding. To achieve this goal, profound understanding of the mode of vaccine action is mandatory and it has been recommended that development of new strategies provide long-lasting immunity. Outer membrane vesicle vaccines (OMVs), which Gram-negative bacteria release them during their normal growth both in vitro and in vivo, are potential vaccine candidates. Nevertheless, more than 20 years ago, the first vaccine based on OMVs was developed against Neisseria meningitidis serogroup B. These nano-sized particles (20-250) revealed great potential for immunomodulation of immune responses and delivery of antigens or antigens included in the vesicle composition. Pertussis vaccines based on outer membrane vesicles (OMVs) have been proved for safety and protectivity in mice, however the compositions not been recognised in different times or conditions during culture period for vaccine production. The properties of OMVs were further investigated in particular emphasizing on the contribution of pertussis toxin (PTx), pertactin (Prn) and fimbriae (Fim) in OMVs-mediated protection against pertussis. The OMVs from bacterial cultures of vaccine strains were obtained using conventional methods and quantitatively protein content assayed, moreover pertussis toxin and pertactin measured by ELISA. Then, it was stained and visualized by TEM. Detoxified vesicles preparations from both vaccine strains were formulated as less than 2 µg of total OMVs protein associated with 2 and 8 Lf/dose of diphtheria and tetanus, respectively as TdaP vaccine. Ultimately, active immunization was performed by a two-dose schedule in two-week interval, and then challenged intranasally 14-21 days later. The OMVs obtained from different stages of culture duration of vaccine strains showed consistent in size and 1D electrophoresis followed by immunoblottings using specific anti-PT, anti-pertactin anti-fimbriae demonstrated expression and translocation of these antigens into OMVs. Either OMVs inactivated by heat or formaldehyde showed no significant differences in mice protection and recovered colonies from lung. However, lung bacterial counts recovered from OMVs to compare with negative control showed significant differences ($p<0.05$). Detailed protein context of OMVs in culture duration is a key concept of providing next potent acellular pertussis vaccine to overcome the current acellular vaccine efficacy.

# LEPTOSPIROSIS VACCINES: NEW APPROACH

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Leptospirosis is the most wide spread zoonosis worldwide. In humid tropical and subtropical areas (Such north of Iran), it is a greater problem than in those with a temperate climate. It remains underdiagnosed largely due to the broad spectrum of signs and symptoms attributable to this Leptospiral pathogen. Humans most commonly become infected through occupational, recreational, or domestic contact with the urine of carrier animals, either directly or via contaminated water or soil. Immunity following infection is generally, but not exclusively, mediated by antibody against leptospiral LPS and restricted to antigenically related serovars. It has long been expected to find an effective vaccine to prevent leptospirosis through immunization of high risk humans or animals. Although some leptospirosis vaccines have been obtained, the vaccination is relatively unsuccessful in clinical application despite decades of research. Recently several vaccines such as recombinant outer membrane protein (OMP) vaccines, lipopolysaccharide (LPS) vaccines, inactivated vaccines, attenuated vaccines, outer membrane vesicle (OMV) vaccines and DNA vaccines against leptospirosis have been evaluated. A comparison of these vaccines may lead to development of new potential methods to combat leptospirosis and facilitate the leptospirosis vaccine research.

# COMMENSALS PROMOTE ANTICANCER IMMUNOTHERAPY

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Immunotherapy has shown recent success against cancer by potentiating the antitumour responses of immune cells, but how such responses are regulated is unknown. Now, some studies reveal that the gut microbiota is a key contributor to successful immunotherapy. The microbiota is composed of commensal bacteria and other microorganisms that live on the epithelial barriers of the host. The commensal microbiota is important for the health and survival of the organism. Microbiota influences physiological functions from the maintenance of barrier homeostasis locally to the regulation of metabolism, hematopoiesis, inflammation, immunity and other functions systemically. The microbiota is also involved in the initiation, progression and dissemination of cancer both at epithelial barriers and in sterile tissues. Recently, it has become evident that microbiota, and particularly the gut microbiota, modulates the response to cancer therapy and susceptibility to toxic side effects. The microbiota modulate chemotherapy, radiotherapy and immunotherapy with a focus on the microbial species involved, their mechanism of action and the possibility of targeting the microbiota to improve anticancer efficacy while preventing toxicity.

# QUALITY CONTROL OF PROBIOTIC PRODUCTS

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Probiotics are live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. The term probiotic is currently used to name ingested microorganisms associated with benefits for humans and animals. Many types of bacteria and yeast are classified as probiotics. They all have different benefits such as reducing gastrointestinal discomfort, improving immune health, relieving constipation, or avoiding the common cold, Probiotics must be safe for their intended use. The quality and safety of the potential probiotic should be assessed by the minimum required tests such as:

- Determination of antibiotic resistance patterns
- Assessment of certain metabolic activities
- Assessment of side effects during human studies
- Epidemiological surveillance of adverse incidents in consumers (after market)
- If the strain under evaluation belongs to a species that is a known mammalian toxin producer, it must be tested for toxin production.
- …

# EVALUATION OF MICROBIAL CONTAMINATION IN TRADITIONAL BUTTERS DURING 2014 AND 2017 (IN URMIA FOOD AND DRUG CONTROL LAB)

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In semi-industrial countries including Iran, all foods are not produced by industrial and highly advanced methods. This study aimed to survey the domestic market for safety of non-pasteurized traditional butters. Samples were provided and send for microbial evaluation in laboratory. Domestically produced samples of butters, were collected in completely sterile condition and transferred to the microbiological laboratory. All microbiological analyses were performed based on ISIRI-2406 and microbiological order of food and drug organization. Samples were evaluated from the point of contamination to Coliforms, Escherichia, Listeria monocytogenes, psychrotrophic Microorganisms, Staphylococcus aureus, Moulds and Yeasts. From 31 butters samples, 29 of them were not in accordance with ISIRI 2406 and microbiological order of food and drug organization and were contaminated with psychrotrophic Microorganisms, Escherichia, Listeria monocytogenes, Coliforms, Moulds and Yeasts. 2 samples were in accordance with ISIRI 2406 and microbiological order of food and drug organization. From inspection of results, we can conclude the situation in case of traditional butters is not acceptable from the point of microbial contamination. Moreover, these results may be a great concern for food producers, distributers, consumers and food authorities to perform the precise surveys and further legal steps.

# MOLECULAR MRTHODS IN FOOD MICROBIOLOGY LABORATORY: APPLICATIONS AND INTERPRETATION OF RESULTS

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Introduction of non-culture based methods in food microbiology could help us for solving current problems in conventional methods that are used in this subject. These methods are able to resolve risk of infection with hazardous pathogens, such as Brucella spp., in laboratory technicians. However, interpretation of results of nucleic acid based methods in food safety could not acquire simply, since these microbial components exist even after inactivation of the microorganisms. Several strategies and molecular techniques for differentiation of live and killed bacteria and infectious or non-infectious viruses are designed. Despite of the progresses and efforts in this regard, no complete solution exists toward this problem. However, the newly developed molecular methods, including high-throughput sequencing and metagenomic, have provided new application of molecular methods in food microbiology. By understanding inappropriate effect of heat, pressure, pH, irradiation, additives, etc. on the entity of microbial nucleic acids and cellular composition of microbes and their effect on conversion of viable to viable but not cultivable (VBNC) bacteria and their pathogenicity in this situation, molecular methods and their results could open new window of knowledge for us.

# PROTOCOL FOR THE VALIDATION OF ALTERNATIVE (PROPRIETARY) METHODS AGAINST A REFERENCE METHOD

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Today, many alternative, mostly proprietary, methods exist that are used to assess the microbiological quality of raw materials and finished products and the microbiological status of manufacturing procedures. These methods are often faster and easier to perform than the corresponding standardized method. The developers, end users, and authorities need a reliable common protocol for the validation of such alternative methods. The data generated will also provide potential end users with performance data for a given method, thus, enabling them to make an informed choice on the adoption of a particular method. The data generated can also be the basis for the certification of a method by an independent organization. This international standard:

- Is intended to provide a specific protocol and guidelines for the validation of proprietary methods intended to be used as a rapid and/or easier method to perform than the corresponding reference method,
- Can also be used for the validation of other non-proprietary methods that are used instead of the reference method,
- Is intended as the successor of the validation protocol published in the first version of ISO 16140 (ISO 16140:2003), and
- Is mainly written for the validation of methods that are capable of culturing the target microorganism, but can also be applied to methods for microorganisms that cannot be cultured such as viruses (e.g. Norovirus) and protozoan parasites (e.g. Cryptosporidium or Giardia). In these cases, some wordings are to be interpreted so as to fit the situation for non-culturable organisms.

# DETECTION OF ASPERGILLUS FLAVUS IN RAW MILK OF INDUSTRIAL FARMS AND DAIRY SECTORS IN TEHRAN SUBURB AND ITS ABILITY TO RELEASE AFLATOXIN B1

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Aflatoxin is one of the toxins which is produced by two fungi called Aspergillus flavus and Aspergillus parasiticus. Aflatoxins possesses carcinogenicity and mutageicity characteristics in human. Milk samples in 50 ml volumes were obtained from 42 raw milk silos of Tehran dairy farms in one-week interval, with three repetation. All samples were transported in an ice box to the lab. For detection of fungul agents we used Sabourd Glucose Agar containing chloramphenical and Saboured Glucose Agar containing Cyclohexamide& Czapec Agar& slide –culture method. Aspergillus flavus was detected from 21 % of raw milk samples. The toxigenicity of Aspergillus flavus (Aflatoxin) was determined and evaluated using selective culture media. Aflatoxin $B_1$ released from 66/6% of Aspergillus flavus spp. Therefore, in the best condition for toxicity of this mold, 33/3 % of them couldn't release Aflatoxin $B_1$.

# BIOFULM FORMATION AND IMMUNE SYSTEMS

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There is a little information about immune response to biofilm formation in bacteria because the majority of studies focused on planktonic cells. Both innate and adaptive immune responses to biofilm are important. The response of innate immune could be defined as respiratory burst, accumulation, phagocytosis and then killing the bacteria producing biofilm. Also activation of neutrophils is important part in innate immune response. This innate immune response is mostly via detecting of pattern recognition receptors (PRRs). Also, recent findings demonstrated that toll-like receptors (TLRs) could be mediated response to matrix components of biofilm. Based on finding in adaptive immune response to biofilm, the role of dendritic cells, T-helper cell and antibodies especially IgG2 and IgG3 are highlighted. Both arms in immune response are necessary to eradicate the biofilm formation in pathogenic bacteria and neither can eliminate the pathogenic bacteria producing biofilm because of persistent and chronic of biofilm.

# TYPES OF TOXIN-ANTITOXIN SYSTEMS

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Bacterial persister or dormant cells are a subpopulation of bacteria, which are genetically identical. Due to decrease of their metabolism, they are slow-growing cells, which lead to antibiotic tolerance and survival in harsh conditions and environmental stresses. According to literature toxin-antitoxin (TA) systems play a major role in the persister conditions. During normal bacterial growth, toxins continually disabled by antitoxins activities. In contrast, during stress state like antibiotics presence, remarkable of antitoxins is degraded. In other hand, the toxins can easily inhibit essential cellular processes, such as DNA replication and protein translation which lead to rapid growth arrest. Based on interaction between toxin and antitoxin they divided to six especial types that type II seems to be more prevalent.

# BIOFILM: NOVEL METHODS IN TREATMENT AND PREVENTION

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Biofilm is defined as a community of bacteria with ability to attach to surface or substratum. The biofilm formation by pathogenic bacteria is responsible for morbidity and mortality in human, so, it seems to study novel therapeutic options than conventional antibiotic therapy. The current strategy for treatment of biofilm could be divided in two major groups. Firstly, focused on biofilm formation via targeting of biofilm that is based on molecular mechanism of biofilm and the second is based on improving the biomaterials applied in medical devices. Therefore, among anti–biofilm agents small molecules such as N-acetylcysteine, cis-2-decenoic acid and aryl rhodanines are able to inhibit biofilm formation in Staphylococcus epidermidis, Sterptococcus pyogenes, Staphylococcus aureus, Vibrio cholera and Psedomonas aeruginosa. But, the mechanisms of these small molecules are unclear. Matrix-Targeting Enzymes is also reliable technique to fight against biofilm. Many studies demonstrated that targeting of matrix component lead to degradation of biofilm formation. Also, coating of biomaterial with bactericidal or bacteriostatic substance makes a disruption of biofilm formation. These methods could be substituted with current anti-biofilm therapies.

# BIOINFORMATICS ANALYSIS OF TOXIN ANTITOXIN SYSTEMS

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The bioinformatics is a reliable method that develops software for understanding the biologic data. It helps to extract useful data from big raw data which this data easily can apply in experimental analysis. Toxin-antitoxin (TA) systems, first described in the mid 1980s, are regulatory loci that encode a toxin and its corresponding antitoxin. The toxin and antitoxin system could be a RNA or protein, but in all TA systems reported to date, the antitoxin is found to be unstable, and the toxin is stable. The role of TA system in biofilm formation, Programmed cell death, plasmid maintenance and Gene regulation is clear and there are many TA loci in bacteria that should be identified and their roles are unclear. Via bioinformatics analysis it will be possible to identify the new TA loci and to determine their role and then by experimental analysis their roles to be confirmed. Many studies demonstrated the new types of TA loci via bioinformatics that their roles were defined after experimental analysis that nowadays, they could be potent antimicrobial targets.

# IN VIVO DETECTION OF BIOFILM FORMATION

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The interaction between host and microbes could determine the destiny of infection, which the in vitro biofilm model could not adequately determine the dynamic and complex of infections. Because in vivo models are more close to human, so, the study in vivo condition on biofilm formation pathogenic bacteria is highlighted. There are several methods including mammalian and non-mammalian models to study the biofilm formation. There are several advantages for non-mammalian models such as rapid development, short generation time, sequenced genome, easily genetically manipulated and etc; but because of short lifespan and duration of experiments, this model not suitable for studying the chronic infections. The mammalian models are closer to human and can easily address some therapeutic for biofilm formation. Also, it is the best chosen methods on biofilm formation depend on the location, accessibility and thickness of biofilm. in vivo models of tissues or device-related infections could help to understand the biofilm physiology in host.

# TOXIN-ANTITOXIN SYSTEM AS A REGULON OF ANTIBIOTIC RESISTANCE AND PATHOGENICITY OF BACTERIA

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Toxin-antitoxin (TA) systems are known as systems that antitoxin inhibited toxin that antitoxin is unstable while toxin is stable. The functions of TA loci are extensive and recent functions in different bacteria rapidly are added. TA loci are potent antimicrobial target in pathogenic bacteria. Many studies demonstrated the role of TA loci in antibiotic resistance and as a regulator in pathogens. In Enterococcus faecalis mazEF TA loci was defined as a regulator of virulence factors and could be reliable antimicrobial target. Also, the role of TA systems especially higBA and mazEF as an antimicrobial target in A. baumannii was cleared. The role of TA loci in antibiotic resistance regulation in Staphylococcus aureus was amazing and mazEF TA loci defined as a potent antimicrobial target in this bacterium. The role of mazEF TA loci as a potent anti-biofilm target also was focused. mqsRA TA loci also known as a regulator of biofilm formation in Pseudomonas aeruginosa.

# SIGNIFICANT EFFECTS OF NATIVE PROBIOTIC BACTERIA IN TYPE 2 DIABETES

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Probiotic bacteria are Benefits of Live and Active if used correctly, effect on the microbial flora of the intestine and important role as a supplement to the health of the host. Lactobacillis are among the major probiotic microorganisms. Several strains of probiotic lactobacilli exist in a wide range of food products, especially dairy products. The effect of lactobacillus probiotic administration on serum, intestine and tissue of streptozotocin -induced diabetic rats. In this study, the effect of probiotic administration of lactobacillus encapsulated daily at 109 m / cfu by gavage with standard food was applied to 32 Wistar rats, which were divided into four groups: control, diabetic control, diabetic lactobacilli and non-diabetic group, they were examined for 6 weeks. In order to probiotic bacteria, lactobacilli were isolated and identified from the sheep breeds produced in the traditional way in the northwest and west of the country. After check of the probiotic properties of lactobacilli, combination of enzymes and emulsification processes are incorporated into the protein. Then adult male and female rats are diagnosed with type 2 for diabetes with high-fat diet and intraperitoneal injection of streptozotocin. In this study, 64 isolates were isolated from four isolates. After confirmation of the probiotic, biochemical, molecular, and lactobacilli antibodies, the effects of invivo and invitro on diabetic rats with high fat diet were confirmed.

include cases The results include the following, which will be briefly cited and referred to in the full article.

- Blood glucose Profile: Decreased 25% of blood glucose levels in mice compared with control group.
- Lipid profile: The study of analysis of variance with probability of 95% showed that probiotic lactobacilli can decrease the level of triglyceride, total cholesterol, decrease of LDL and increase HDL level.
- Antioxidant profile: bacteria lead to a significant increase in the total serum total antioxidant levels and superoxide dismutase and glutathione peroxidase and catalase enzymes.
- Inflammatory factors: significantly altered the levels of IL1, IL6, TNF-α

The effect of probiotic administration of lactobacillus with reduction of liver histopathological and pancreas in diabetic male and female rats.

# FOOD WASTES: VALUABLE SOURCES OF PREBIOTICS

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According to the Food and Agriculture Organization, roughly one-third of the edible parts of food produced for human consumption gets lost or wasted globally. This amount accounts about 1.3 billion tn/year. The waste management is one of the major preoccupations of food industries in recent years and its recovery has many advantages both economically and environmentally. Food wastes are today considered as a cheap source of valuable components since the existent technologies allow the recovery of target compounds and their recycling inside food chain as functional additives in different products. Generally, food waste is classified into two main groups of animal and plant origin. Both groups are a rich source of functional compounds, some of which like oligosaccharides, have a prebiotic effect and can improve the growth and survival of probiotic bacteria. This review paper highlights the extraction and production of prebiotic ingredients from food waste.

# METABOLIC ROLE OF LACTOBACILLI IN WEIGHT MODOFICATION IN HUMAN AND ANIMALS

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Obesity represents a worldwide public health crisis. Trials suggested that intestinal microbiota may contribute to the development of obesity and highlighted the involvement of bacteria, including Lactobacillus spp., in changes to the host metabolism. Several experiments have shown significant effects of Lactobacillus probiotics on weight modification. Lactobacillus spp. are involved in the digestion of complex carbohydrates not digested by the host in the colon and also participate in the degradation of lipids and simple sugars in the duodenum and jejunum. Moreover, Lactobacillus species survive throughout the gastrointestinal tract and produce an antimicrobial agent, allowing them to reduce the number of bacteria in the gut. Hence, Lactobacillus spp. can have a significant impact on microbiota and, consequently, on weight change. Here, we review current studies of Lactobacillus spp. involved in weight change and discuss the different mechanisms of action by which Lactobacillus spp. acts on host digestion and appears to influence weight.

# DAIRY PRODUCTS-VALIDATION AND ENUMERATION OF LACTOBACILLUS CASEI AND LACTOBACILLUS PARACASEI IN SELECTIVE MEDIUMS

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The aim of this study is to develop a suitable method for enumeration of the most probable number of Lactobacillus casei and L. paracasei by using methods of Danisco and DSM company; for L. Casei, MRS agar with vancomycin antibiotics (50 microliter of solution stock in 100 ml of MRS culture) and for L. paracasei, MRS agar with Melezitose sugar (10%) and salt (3.5%) is used. Also, for validation, based on ISO 16140, organisms are used in three levels of $L_0$, $L_1$ and $L_2$ ($10^3$-$10^8$ CFU/gr) and the productivity factor and selectivity factor of culture is calculated based on ISO 1113 and using reference culture and non-target microorganisms (such as L. bulgaricus, L. acidophilus and Streptococcus thermophilus). This study was conducted in 7 different labs simultaneously and the results show that mentioned cultures have appropriate PR (PR >/ 0.7) for target microorganisms' and appropriate SF for full inhibition of non-target microorganisms.

# INVESTIGATING THE ROLE OF PROBIOTICS IN NEUROLOGICAL DISEASES AND DISORDERS SUCH AS ALZHEIMER, PARKINSON, AUTISM AND MS

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In recent years, it has been proven that probiotics can play a very important role in protecting the nervous system in the brain and that's why they have been more studied. In fact, the main effects of the intestine microorganisms or probiotics on the brain depends on the activity of vagus nerve. The importance of the vagus nerve is, the nerve is the main part of the parasympathetic automated nervous system, which controls number of important activities, such as heart rate and intestinal movements in the body. The purpose of this study was to express the role of probiotics as a powerful tool against neurological disorders and diseases including Alzheimer's disease, MS, autism and Parkinson's disease. The health effects of Probiotics on the nervous system are due to the improvement of the immune system, the reduction of APPB (Amyloid Precursor Protein B), the production of various compounds with high protective activity and increased integrity of the mucous membrane of the intestine. The use of probiotic strains in fermentation products can lead to improved activity and increasing their role in protecting the nervous system. As a result, probiotics can be considered as an alternative to combat a large number of neurological disorders beside lifestyle modifications and environmental conditions, and it is hoped that more extensive studies to take place on probiotics' effects on the prevention and treatment of these disorders.

# AN INTRODUCTORY REVIEW ON INCREASING THE SURVIVAL OF PROBIOTIC BACTERIA IN DAIRY PRODUCTS USING ESSENTIAL OIL

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Increasing the survival of probiotic bacteria and improve the hygienic quality of dairy products using natural preservative agents is widely accepted today. It has long been recognized that some essential oils (EOs) have antimicrobial properties, so that they can be used as food flavoring agents, preservatives, also for medicinal purposes. However, to establish the usefulness of natural preservatives, they must be evaluated alone and in combination with other preservative factors (such as probiotic bacteria) to determine whether there are synergistic effects and to devise effective combinations. This study is a review on investigation of feasibility in using of EOs (including: Teucrium polium, Cumin, Allium ascalonicum Mentha longifolia, Ferula sharifi and Pimpinella anisum) in probiotic dairy products. In most of these research survival of L. casei decreased throughout the storage period. Nevertheless, probiotic dairy products and treatment containing medium concentration EOs had the highest viable count of probiotic bacteria. But the lowest concentration of these EOs was the most appropriate treatment in sensory assessment. Based on our review, dairy products such as yoghurt, cheese and dairy drinks can be a suitable food matrix to survive probiotic bacteria while certain herbal EOs is added.

# IMPORTANCE OF USING FUNCTIONAL FOOD FOR THE HEALTH OF CONSUMERS

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A viable microbial food supplement which beneficially influences the health of the host. Probiotics are live active cultures that are supposed to improve the balance of the gut microbiota, with specific effects, in particular, the immune modulatory potential of specific strains. The strains with the most beneficial properties, potential sources of probiotics, belong most frequently to the genera Bifidobacterium and Lactobacillus. Important factors that cause this imbalance include:

Decreased immune function, poor diet, excessive carbohydrates, sugar and Trans fat, Drugs-especially antibiotics, oral contraceptives and cortisone-like medications.

The important signs of this imbalance:

- Abdominal pain or cramps
- Colon cancer
- Constipation or diarrhea
- Distention/bloating
- Fatigue
- Food Allergy

Dairy products are the best vehicle for probiotic bacteria. For example: Yoghurt, cheese, kefir, Doogh.These products are also referred to as "Functional Dairy food". A daily intake of at least $10^8$-$10^9$ viable cells, which could be achieved with a daily consumption of at least 100g of a product containing between $10^6$-$10^7$ viable cell in gram that intake to provide a therapeutic effect.

# INVESTIGATION OF ACID TOLERANCE PROPERTY OF LACTOBACILLUS ACIDOPGILUS (PTCC 1643) AS A POTENTIAL PROBIOTIC CANDIDATE

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Lactobacillus acidophilus is Gram-positive and classified as the lactic acid bacteria. Lactobacillus species are widely recognized to have probiotic effects. One of the most important properties of Lactobacillus bacteria for their probiotic potential is tolerance to low ph. In this study, acid tolerance test carried out under various pH for commercial Lactobacillus acidophilus (PTCC 1643) as a probiotic candidate. The selected strain of Lactobacillus acidophilus (PTCC 1643) was assessed for tolerance to low pH levels. Thus cell suspentions were 10-fold diluted with MRS medium, adjusted to ph 2.5, 4 and 7 (as control) with HCl and incubated at 37 $^{oC}$ for 3 and 4 hours. Then plating of diluted suspantions in various pH was performed on MRS agar and incubated anaerobically at 37$^{oC}$ for 48 hours. The growth of living cells on MRS agar and colony count of bacteria represent the amount of acid tolerance. A probiotic must be able to survive in stomach environment with seriously low ph and tolerate the harmful effects of gastric juice. Thus in this study demonstrated the survival of Lactobacillus acidophilus (PTCC 1643) at pH 2.5 and 4 compared to pH 7 after 3h and 4h incubation periods were very considerable. The Lactobacillus acidophilus (PTCC 1643) in terms of acid tolerance can be considered as a potential probiotic.

# COMPARISON OF PHENOTYPIC AND GENOTYPIC METHOD FOR DETECTION OF CAMPYLOBACTER SPP. FROM DYSENTERY SAMPLES

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Campylobacters are zoonotic bacteria and a leading cause of human gastroenteritis worldwide. Although, gastroenteritis and dysentery are very common infection in our region campylobacter is not a burden for clinical laboratories to be investigated by microbiological or molecular methods. Therefore, this study conducted to compare different phenotypic methods with PCR as molecular method for diagnosis of common Campylobacter species. A total of 230 dysentery samples were subjected to this study from December 2014 to December 2015. For enrichment, all the samples were transferred to Preston media and incubated in CO2 condition at 42 ˚C for 72 hours. Afterwards, samples recultured in MCCDA and brucella agar enriched with 10% sheep blood agar. In addition, all the Preston media were filtered and cellulose filters were left in Brucella agar and MCCDA as well. All the media were incubated in CO2 condition at 42 ˚C for 72 hours. Colonies that have been grown were investigated by standard biochemical tests. Finally, DNA was extracted from samples and PCR assay was performed for amplification of mapA (C. jujeni) and CeuE (C. coli) specific genes. Out of 230 samples, 45(19.5%) were positive through culture methods. Filtration didn't improve the recovery of the campylobacter species. However, 75(25.2%) and 5(6.6%) samples were positive for map A and CEU genes respectively. Few samples were confirmed by sequencing method. These findings suggest that PCR should be the preferred diagnostic method for detection of Campylobacter in humans where, timely culture is not feasible.

# Q FEVER: EPIDEMIOLOGY AND NEW DETECTION TOOLS

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Q fever is a zoonosis caused by the intracellular, gram negative bacterium Coxiella burnetii. Q fever has worldwide distribution, but its epidemiological features vary according to the geographic area considered. The main reservoirs of C. burnetii are cattle, sheep and goats. C. burnetii can be found in birth products, urine, feces, and milk of infected animals. Inhalation of aerosolized bacteria that are spread in the environment by infected animals is the main route of disease transmission to humans. Because the culture of C. burnetii is very difficult, specific indirect diagnostic tools have been mainly used for diagnosis. Serology is the most common method for detecting C. burnetii infection. PCR-based assays targeting sequences of different types of plasmids, the 16S-23S RNA, the superoxide dismutase gene, the com1 gene or the IS1111 repetitive elements in human or animal samples have been developed for the detection of C. burnetii in clinical samples. Real-time PCR is a less time-consuming technique than PCR and has the advantage of quantifying the number of bacteria in clinical samples. The qPCR system targeting IS1111 is the most sensitive method that can detect the bacterium in the sera of patients within the first two weeks of infection, when serology is not yet positive. Immuno-PCR is a new method, combining the PCR wit ELISA, allowing an improvement in sensitivity and specificity. Immuno-PCR had significantly better sensitivity than ELISA and IFA in sera collected during the first two weeks after the onset of symptoms. The detection of C. burnetii-specific gamma interferon production has also been proposed as a new diagnostic tool.

# APPLICATION OF BACTERIA TYPING FOR PREVENTION OF HEALTH CARE ASSOCIATED INFECTIONS

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Healthcare associated infections are a major cause of morbidity and mortality in healthcare settings, affecting millions of patients each year. These infections could damage up to 50% of hospitalized patients in intensive care wards and results in thousands of deaths and excess health care costs. Nowadays increasingly trends of drug-resistant worsen the problem and represent a major threat for patients. Monitoring profile of the ecosystem of health care settings is essential for design of rational policies for nosocomial infection control. The role of pathogen typing is to investigate the source and rout of pathogen transmission. Furthermore, it helps to identify the common microbial resident of each setting and choosing more appropriate policies for prevention and refining the pattern of nosocomial infection. Among phenotypic and genotypic techniques for determining relatedness of isolates for epidemiologic investigation, molecular analyses based on DNA are methods of choice. The most commonly used DNA-based molecular methods include pulsed-field gel electrophoresis (PFGE), PCR-based typing methods, and multilocus sequence analysis. These techniques aid in the identification of the source of pathogen, distinguish infectious from noninfectious strains, drug resistance from drug susceptible strains and relapse from reinfection. In this manuscript we try to review the techniques and their application for prevention of nosocomial infections. Many studies concluded that the integration of molecular typing with conventional hospital epidemiologic surveillance is cost-effective due to the reduction in the number of nosocomial infections.

# APPLICATION OF BACTERIAL 16SrRNA TECHNOLOGY FOR DIAGNOSIS, TYPING AND PROVIDING THE EPIDEMIOLOGICAL INFORMATION ON INFECTIOUS DISEASE AGENTS

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According to World Health Organization statistics of 2015, infectious diseases remained in the top 10 causes of mortality worldwide. Rapid and accurate identification of infectious agents is one of the major challenges for clinical practice and public health surveillance. 50% of the causative agents of the human diseases in sepsis are not cultured which is the gold standard of the bacterial detection system. This will lead to empirical treatment of disease for the physician that has several consequences including unsure treatment as a result of unclear viral or bacterial disease that for the latter there present an antibiotic treatment, mal antibacterial treatment of the bacterial agent with its risks for patient and the increasing antibiotic resistance cases in hospital and further human community. Despite complex research tools for microbial detection, rapid and accurate molecular diagnostics for identification of infection in humans have not been extensively adopted. However, the 16S rRNA gene as a molecular marker has presented an alternative option to the conventional methods. 16S rRNA gene is ubiquitous to members of bacteria, has no horizontal gene transfer and with ever-expanding databases of bacterial sequences, became a useful tool for bacterial identification. This talk will focus on molecular specification of the 16SrRNA and its application. It includes, the gene structure, preparation of bacterial sample, identification of the bacteria applying present databases and preparation of phylogenetic data.

# BACTERIAL MOLECULAR TYPING METHODS; ADVANTAGES AND LIMITATIONS

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To be frank, the emergence of clinical isolates with drug resistance and epidemiological typing of them are serious challenges today. In this way, epidemiological tools can provide suitable approach to detect, monitor, and control these threats in real time. There are generally, two different epidemiological typing methods; Conventional and molecular. Conventional methods, such as serotyping and phage typing have been useful in describing the epidemiology of infections. In the other hand, the molecular typing methods most commonly used are the DNA-based methods, such as DNA-based typing, amplification-based typing, and sequencing methods. In generally, the advantages of them to conventional methods include the higher sensitivity and specifity, reproducibility, reliability, ease of interpretation, ease of performance, cost-effective, relatively rapid and a balance between increased discriminatory power and applicability. In recent decade, the ultimate goal was the development of an "ideal" molecular typing method. There is some candidate to this propose like as pulsed-field gel electrophoresis and whole genome sequencing. The aim of this outline is to review the value of different typing methods and addresses their main advantages and limitations.

# MICROBIOLOGICAL AND MOLECULAR METHODS FOR THE IDENTIFICATION AND TYPING OF BRUCELLA

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Brucellosis is a bacterial zoonosis of human and animal health importance with worldwide distribution. The disease is caused by members of the expanding genus Brucella. Species identification and sub-species characterization of Brucella strains infecting animal hosts and human cases can provide necessary epidemiological information required for control interventions and elucidating infection sources. For this purpose, phenotyping by microbiological methods and genotyping by molecular PCR-based assays are applied. Presumptive microbiological detection of Brucella isolates is made by evaluation of colony morphology, microscopic examination, agglutination with poly-specific serum and biochemical tests such as oxidase and catalase. Determination of species and biovars requires biotyping by specific procedures including CO2 requirement, H2S production, agglutination with mono-specific anti-sera, susceptibility to basic fuchsin and thionin dyes and phage-typing. However, these methods are time-consuming and need special expertise and biohazard containment facilities not available in many laboratories. Genes encoding 16S RNA and BCSP31, and IS711 insertion sequence are main targets used for genus-specific detection by PCR. For identification at species level, designated AMOS and Bruce-ladder multiplex PCR assays are the most widely used methods. Molecular characterization of Brucella strains is best done using multilocus variable number of tandem repeats (VNTR) analysis (MLVA) and multilocus sequence typing (MLST) which are useful for molecular epidemiology and population genetic analyses, respectively. Recently, SNP-typing by real-time PCR methods has been also developed which provide rapid tools for routine diagnostic applications.

# ISSUES AND CHALLENGES IN PNEUMOCOCCAL VACCINES

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Streptococcus pneumoniae, is a microorganism that causes pneumonia, otitis media, meningitis and bacteremia, and remains a cause of morbidity and mortality in both children and adults. Unconjugated and conjugated pneumococcal polysaccharide vaccines far now have been introduced in general health and reduced the rate of pneumococcal infections. The first vaccine developed, the 23-valent pneumococcal polysaccharide vaccine (PPSV23), protected adults and children older than 2 years of age against invasive disease caused by the 23 capsular serotypes contained in the vaccine. Some challenges and failures flourished for PPSV23 including: immunity unresponsiveness for children younger than two years old, temporarily effectiveness in elderly people, lack of usefulness in immunocompetent elderly people, these vaccines affects slightly on carriage of vaccine serotypes in nasopharynx, lack of effect on herd immunity and failure on mucosal immunity induction. Because PPSV23 did not elicit a protective immune response in children younger than 2 years of age, the 7-valent pneumococcal conjugate vaccine (PCV7) containing seven of the most common serotypes (4, 6B, 9V, 14, 18C, 19F, 23F) from PPSV23 in pediatric invasive disease was developed for use in children younger than 2 years of age. The last vaccine to be developed, the 13-valent pneumococcal conjugate vaccine (PCV13), contains the seven serotypes in PCV7, five additional serotypes from PPSV23, and a new serotype not contained in PPSV23 or PCV7 (1, 3, 5, 6A, 7F, 19A, 14). The challenges that appeared for these generation of vaccines including Serotype replacement with virulent strains that are not contained in the polysaccharide vaccines has been determined after vaccine implementation , high cost rates for production of conjugated generation of pneumococcal vaccines and variation between geographical pattern and distribution of serotypes in which we can see these distinct patterns , emphasizes the need for continued research into novel generations of vaccine such as protein antigen vaccines. However, there are so many unsolved complications and issues about the challenges that Pneumococcal vaccination may create in global general health and future efforts for improving of Pneumococcal vaccination probably open a new insight for correction of these type of vaccines.

# GUT-LUNG AXIS
# A BRIEF DISCUSSION ABOUT ROLE OF GUT MICROBIOME THROUGH RESPIRATORY DISEASES

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The gut microbiota plays a critical role during the development of the immune system and homeostasis. Recent Investigations have been demonstrated the changes in microbial composition and function, termed dysbiosis, in the gut have been linked to alterations in immune responses and to disease development in the lungs. Although the gut–lung axis is only beginning to be understood, emerging evidence indicates that there is potential for manipulation of the gut microbiota in the treatment of lung diseases. Chronic lung diseases, such as asthma and chronic obstructive pulmonary disease (COPD), are common and often occur together with chronic gastrointestinal tract (GIT) diseases, such as inflammatory bowel disease (IBD) or irritable bowel syndrome (IBS). Up to 50% of adults with IBD and 33% of patients with IBS have pulmonary involvement, such as inflammation or impaired lung function. Furthermore, patients with COPD are 2–3 times more likely to be diagnosed with IBD. Individuals with asthma have functional and structural alterations in their intestinal mucosa, and patients with COPD typically have increased intestinal permeability. Although the mature GIT and respiratory tract have different environments and functions, they have the same embryonic origin and, consequently, have structural similarities.

Here we will discuss the role of microbiota in immune homeostasis, the similar mechanism in exacerbations of chronic gut and lung diseases, hypotheses of gut-lung axis and Clinical implications of gut-lung axis.

# The phylogeny of Crimean -Congo Hemorrhagic Fever virus

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Crimean-Congo haemorrhagic fever (CCHF) is a zoonotic disease caused by a tick-borne virus (*Nairovirus*) of the *Bunyaviridae* family. The CCHF virus causes severe viral haemorrhagic fever outbreaks, with a case fatality rate of 10–40%. CCHF is endemic in Africa, the Middle East, Europe and Asian countries and it is the most widely distributed agent of severe haemorrhagic fever known.

The genome of CCHFV is composed of three single-stranded RNA. These segments, designated small (S), medium (M), and large (L), minimally encode the nucleocapsid, envelope glycoproteins, and RNA-dependent RNA polymerase, respectively. Molecular methods based on partial or complete sequence data of the S segment have been used to identify certain S segment genotypes. M segments sequencing enables an insight into the ways CCHFV have evolved. Results of bioinformatics studies showed that S and L segments from the same strains have similar evolutionary history. Bioinformatics data could readily differentiate between alternative strains of CCHFV so they help us to facilitate a global epidemiological study. CCHFV genotypes show a strong relationship to the geographical area of parent virus isolation, so they divided in 6 clades or 7 genotypes include, Asia 1, Asia 2, Europe 1, Europe 2, Africa 1, Africa 2 and Africa 3, which has been employed as a simple description of genotype. Some studies were done to detect circulating CCHV genotypes in patients, animals and ticks during 2 decades in Iran. Phylogenetic trees have shown that clade IV (Asia 1 and 2), clade V (Europe 2) and clade VI (Europe 1) are circulating in Iran.

Some factors, such as the illegal/legal trade in livestock, migration of birds who carry the ticks may have played roles in the dispersal of CCHFV as a trans-boundary virus. Molecular epidemiological observations support a global and dynamic reservoir of CCHF virus. Sheep is the main reservoir of virus in Iran although other domestic and wild animals may be infected.

Furthermore large RNA viruses may be changed during the time by mutation, recombination and re-assortment, but the genomes of arthropod-borne RNA viruses, need to function and maintain high fitness in both arthropod and vertebrate host cells. Thus, low levels of genetic diversity are frequently observed for arboviruses. The genome of CCHFV is interesting since, as well as showing features of high genetic stability, it also shows features of high flexibility.

Complete genome entries of several CCHFV are now available in GenBank, and analysis of these sequences are enabling evolutionary hypothesis to be inferred and tested.

## Isolation and identification of Burkholderia mallei from Mallein positive Horse

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Glanders is one of the important zoonotic diseases in the world that occurs primarily in solipeds. Human seldom affected to this disease in close contact with Glanders cases and carnivores may be infected, after consumption of contaminated meat. Causative agent of the disease is a non spore and non motile gram negative bacteria which called Burkholderia mallei.

Last year one suspect horse with positive reaction to Mallein test in Semyrum was reported to Reference Laboratory at Razi Vaccine and Serum Research Institute. Swap samples from nostrils were collected and then cultured at TSB and TSA media with 5% glycerin. After 48 hours, brown colonies were appeared at the media. Biochemical identification tests such as culture at TSI, Motility, Gelatin Liquefied, Nitrate reduction, Oxidizes sugars and Growth at 42 degree were performed and also PCRs and injection to two mail Guinea-pigs were done. API test were used simultaneously too.

All biochemical tests, API and PCRs identified that isolates is Burkholderia mallei and Strauss reaction (Orchitis) appeared after two days.

Active surveillance of Glanders is necessary for control and eradication program of the disease in Iran and we have to use from all diagnostic tools such as Malleination, CF, ELISA, Western Blotting and other techniques to finding chronic cases especially in horses.

# Development and optimization of an in ELISA system for detection of glanders in horse

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Glanders is a zoonotic inflection caused by Burkholderia mallei, a Gram negative, non-motile, nonencapsulated and non-spore-forming bacillus in the bacterial family Burkholderiaceae.
LPS were isolated from bacteria and were precipitated. Protein assay was done after dialysis. Then a checker board was done for determination of the best concentration of antigen and antibody. Culture and PCR were done from samples. Stability was investigated on days 0, 1, 3, 5 and 7 in 37 ℃.

The best concentration of antigen and antibody were acquired 200 ng and 1/100 respectively. All of 100 samples that were negative in Mallein tests, were negative in this ELISA kit either; but out of 10 samples that were positive in Mallein test, just 2 samples were positive in ELISA kit. Meanwhile the results of culture and PCR were compatible with ELISA kit's results. There was a variation less than 10% between days 0 and 7 in 37 ℃ that shows at least 1 year stability of this kit in refrigerator temperature (4 – 8 ℃).

Performing ELISA test based on LPS antigen shows that this test can be a suitable way for screening beside Mallein test for accurate detection. It is noticed that the specificity of ELISA test was determined more than Mallein test; regarding that culture and PCR are gold standards. Therefore incorrect sampling can change the specificity of Mallein test. The results of this kit can encourage designing of an ELISA kit for detection of Glanders in horse.

**Role of Gut Microbiota in Metabolic Syndrome and Obesity: Exploring the Relationship**

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**Background:**
Obesity is a global epidemic and a complex chronic disease that has become a major public health problem in many countries throughout the world because of its high prevalence, causal relationship with many serious medical illnesses, adverse effects on quality-of-life, and marked economic consequences related to increased health care costs and decreased productivity. Obesity and its subsequent health conditions, including metabolic syndrome, insuline resistance, nonalcoholic fatty liver disease (NAFLD), type 2 diabetes mellitus (T2DM), and cardiovascular disease, result in extensive morbidity, mortality, and health care expenditures. It is important to note that in the insulin resistant state and T2DM, a low-grade inflammatory state exists that is driven by multiple factors (including altered fatty acid metabolism) that are linked to impaired insulin sensitivity in muscle and adipose tissue, as well as defective pancreatic islet function. The primary trigger(s) underlying this state of chronic metabolic inflammation is still unclear, but intestinal microbiota has been linked to this chronic low-grade inflammatory state. The human gut lumen contains a broad variety of microorganisms, most notably bacteria. Although bacteria were generally considered as pathogens, an essential symbiotic interaction between the human host and intestinal bacteria is the forging and maintenance of the immune system in the gut. The cross-talk between bacteria and the host immune system is probably instrumental for the fact that the gut microbiota composition is unique for each individual. Despite the intra-individual variation, 5 phyla dominate the intestinal community. These phyla are the *Actinobacteria*, *Bacteroidetes*, *Firmicutes*, *Proteobacteria* and *Verrucomicrobia*. The microbial composition changes along the gastrointestinal tract, caused by the high acidity and higher oxygen content in the stomach and duodenum.
In healthy individuals, the composition of the intestinal microbiota is diverse. This seems to be an important characteristic because diversity decreased and dysbiosis has been shown to be in obese subjects, as well as marked differences in microbial composition have been reported in obese patients with metabolic syndrome, T2DM patients, hypertension, fatty liver, hyperlipidemia and cardiovascular diseases. It has recently become clear that gut microbiota, as well as their endogenous metabolic function enabling the digestion of food components, is related to dietary intake. In this respect, it is interesting to note many of these specific dietary compounds have been linked to altered gut microbiota composition. In addition to short-chain fatty acids (SCFAs), gut microbes produce a multitude of other metabolites that may influence host metabolism. An interesting case in this regards is the bacterial metabolite trimethylamine converted to trimethylamineoxide (TMAO) in the liver by the hepatic enzyme flavin-containing monooxygenase 3 (FMO3). TMAO accelerate atherosclerosis in mice and TMAO plasma levels have been shown to correlate with incidence of cardiovascular disease in humans.
**Conclusions and Future Perspectives:**
Few effective treatments exist for obesity, in part owing to a limited understanding of its complex and multifactorial etiology. Discoveries emerging from population genomics are identifying biomarkers and relevant causal mechanisms, which enable the development of better preventive, diagnostic, and therapeutic approaches. Clearly, we are only beginning to understand the mechanisms by which gut microbiota (or their metabolites) drive host-metabolism and immunological function in humans. This is partly caused by the fact that the techniques necessary to address these questions are also in development, including assessment of sequencings methods, computational analysis, and isolation of bacterial metabolites. Ultimately, these efforts may lead to the development of more personalized diagnostic and therapeutic tools by identifying specific strains or “tailor-made” bacterial mixtures while improving by, diet and medication (eg, short-term oral antibiotics) to improve metabolic control. In conclusion, the intestinal microbiota has great therapeutic potential in the treatment of obesity, fatty liver and T2DM. Therefore, further studies are needed to establish the role of fecal microbiota in metabolism, and insuline resistance, metabolic syndrome, T2DM, fatty liver and cardiovascular diseases.

# Metabolic role of lactobacilli in weight modification in human and animals

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Obesity represents a worldwide public health crisis. Trials suggested that intestinal microbiota may contribute to the development of obesity and highlighted the involvement of bacteria, including *Lactobacillus spp*., in changes to the host metabolism. Several experiments have shown significant effects of Lactobacillus probiotics on weight modification. *Lactobacillus spp.* are involved in the digestion of complex carbohydrates not digested by the host in the colon and also participate in the degradation of lipids and simple sugars in the duodenum and jejunum. Moreover, Lactobacillus species survive throughout the gastrointestinal tract and produce an antimicrobial agent, allowing them to reduce the number of bacteria in the gut. Hence, *Lactobacillus spp*. can have a significant impact on microbiota and, consequently, on weight change. Here, we review current studies of Lactobacillus spp. involved in weight change and discuss the different mechanisms of action by which Lactobacillus spp. acts on host digestion and appears to influence weight.

# MICROBIAL DIVERSITY IN THE GENOMIC ERA: THE GENOMIC ENCYCLOPAEDIA OF BACTERIA AND ARCHAEA

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The project to generate a Genomic Encyclopedia of *Bacteria* and *Archaea* (GEBA) was initiated about one decade ago following a recommendation during an American Academy of Sciences colloquium on *Reconciling Microbial Systematics & Genomics* in Fall 2006. After a successful pilot project run as collaboration between the DOE Joint Genome Institute (JGI) and the German Collection of Microorganisms and Cell Cultures (DSMZ) [1] proved the value of the phylogeny-driven initial approach for phylogeny, taxonomy, description of novel species, but also the binning of metagenomics studies, the project was extended by several large scale sequencing projects [2].
The first of these one thousand genome sequences (each) strong follow-up projects [3,4] reached now the publication phase, while phase II (from individual species to whole genera) and phase III (the genomes of soil and plant-associated and newly described type strains [5]) are currently deep into the genome sequence production stage. GEBA is meanwhile complemented by similarly structured spin-offs, such as the 'One thousand Actinomycetes' project run by the same culture collections and sequencing centre, as well as more focused projects such as the '*Mycobacteria* Phylogenomics Project' that allow taxonomic emendations of unprecedented accuracy. Results and impact of these large scale projects on the description of novel taxa will be reported.

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# Posters Presentation

**18th International & Iranian**

**Congress of Microbiology**

# P1 - 3: STUDY THE PREVALENCE AND THE ANTIBIOTIC SUSCEPTIBILITY PATTERN OF BACTERIAL AGENTS ISOLATED FROM PATIENTS WITH BURN WOUND INFECTION ADMITTED IN TO THE CLINIC OF KERMANSHAH

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**Background and Aim:** The burn wounds provide bacteria with an enriched environment to grow and multiplication. Therefore, bacterial infection is responsible for … of mortality associated with burned patients. The aim enriched environment to grow of this study was to assess the bacterial agents isolated from burn infection and their susceptibility patterns in patients admitted into Emamkhomainy Hospital in Kermanshah.

**Methods:** In this study 287 samples were taken from patients and test for bacterial infection. the samples first were cultured in typtic soy broth and after 24 hours they were cultured on EMB and blood agar. the bacterial agent then was identified using bacteriological and biochemical tests. Their susceptibility to antibiotics was assessed using disk diffusion method.

**Results:** Of 287 sample tested, 269 (93.7%) cases were culture positive for bacteria which belonged to 154 (53.6%) women and 133 (46.3%) men. The most common bacteria isolated were pseudomonas aeruginosa (32.1%), klebsiellapenumonia (24.3%), citrobacterfreundii (20.9%), acentobacter (6.9%), Enterobacteraerogenes (4.5%), Staphylococcus aureus (4.8%). The results of antibiotic susceptibility testing showed the maximum resistance for AK and CZX and minimum for GEN and IPm.

**Conclusion:** Given or result prevalence of gram negative bacilli such as citrobacter and klebsiella, it is necessary to take appropriate measures by doctors and nurses to prevent burn infections in hospital. It is also important to use antibiotics in a way that prevent the emergence of resistant bacteria.

**Keywords:** Bacerial agents ,burn infection,antibiotic susceptibility pattern, kermanshah

# P2 - 4: MUTATION OF OPRD GENE AND IMIPENEM RESISTANCE IN PSEUDOMONAS AERUGINOSA ISOLATES IN GUILAN PROVINCE

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**Background and Aim:** Pseudomonas aeruginosa is a gram-negative opportunistic pathogen and one of mortality causes of nosocomial infections specifically in severely burned patients. One of the drug resistance mechanisms in Pseudomonas aeruginosa is mutation or downregulation of oprD gene. oprD is a specific porin to amino acid uptake involving in imipenem entrance. In this study, we investigated oprD mutations in imipenem resistant isolates of Pseudomonas aeruginosa in Guilan province.

**Methods:** In this study, 45 strains of Pseudomonas aeruginosa isolated from different clinical samples of Rasht and Lahijan hospitals and laboratory between 2014 to 2016 and identified by biochemical tests. The antibiotic resistance and susceptibility of the strains was determined by Kirby Bauer method and PCR-sequencing was performed to assess oprD gene mutations in imipenem resistant strains.

**Results:** From 45 isolates of Pseudomonas aeruginosa, 20 isolates were imipenem resistant. The highest resistance for imipenem was seen in 512 µg/ml. also, PCR-sequencing analysis showed that some isolates had missense mutations in oprD gene such as T103S and K115T.

**Conclusion:** In this study, mutation in oprD as a porin involving in imipenem entrance with loss of function is a reason of multi-drug resistance in some strains in Guilan province hospitals and laboratories. It appears that OprD mutation led to its affinity modification to imipenem in some isolates.

**Keywords:** Imipenem, OprD , Pseudomonas aeruginosa, Sequencing

# P3 - 14: PREVALENCE OF QNRA, QNRB, QNRS GENES IN FLUOROQUINOLONE RESISTANCE KLEBSEELLA PENUMONIEA ISOLATED FROM HOSPITAL SAMPLES

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**Background and Aim:** Antibacterial resistance becomes a major problem all over the world. Acquiring the integron is considered as a factor in being multi resistance for intestinal gram negative microorganisms. Due to the acquisition of ESBL Klebsiella pneumoniae producing plasmid that encodes them into a number of broad-spectrum antibiotics such as cephalosporins have become resistant.

**Methods:** In this study 50 strains of Klebsiella pneumoniae isolated from clinical samples, diagnosed by biochemical and molecular methods. Resistance to Nalidixic acid, Ciprofloxacin and Norfloxacin tested by Kirby-Bauer standard method. To evaluate the frequency of qnrA, qnrB, qnrS genes, were used specific primers.

**Results:** In this study, resistance Nalidixic acid, Ciprofloxacin and Norfloxacin reported 46%, 28% and 34% respectively. Prevalence of qnrA, qnrB and qnrC reported 22.85%, 34.28% and 42.85% respectively.

**Conclusion:** The emergence of resistance to antibiotics is an issue that should be taken seriously. Therefore, continuous assessment and the correct line of treatment and the proper use of bacteriological antibiogram discs to be done in the lab.

**Keywords:** Antibiotic resistance, Ciprofloxacin, klebsiella pneumonia, Nalidixic acid

# P4 - 28: DETECTION OF RESISTANCE PATTERN IN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS AND VANCOMYCIN-RESISTANT IN GHAEMSHAHR RAZI HOSPITAL AND SARI SHAHID ZARE HOSPITAL

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**Background and Aim:** Drug-resistant Staphylococcus aureus, for decades, has caused serious problems in the treatment of infections caused by this bacterium. Staphylococcus aureus is known as an important pathogen in hospital. The aim of this study is to identify pattern of susceptibility of Staphylococcus aureus and vancomycin-resistant to methicillin in Ghaemshahr Razi hospital and Sari shahid Zare.

**Methods:** A total of 100 samples from patients hospitalized in Ghaemshahr Razi hospital and Sari shahid Zare was prepared and transferred to the laboratory. After the transfer on blood agar and incubated for 24 h incubation at 37 ° C. In terms of look likes and Gram staining and Biochemical tests like Catalase and sensivity to Novobiocin and resistance to Polymixin were studied. For isolated strains, antibiotic susceptibility testing was performed and the presence of van and uida genes were studied.

**Results:** In 100 samples, 78 samples were positive for Staphylococcus aureus and 77 samples (77%) were resistant to methicillin, and 27 samples (27%) were resistant to vancomycin.

**Conclusion:** Despite treatment of infections caused by Staphylococcus aureus by vancomycin in hospitals, a gradually increasing resistance to this drug will be the main problem in future.

**Keywords:** Resistance, Staphylococcus aureus, methicillin, vancomycin

# P5 - 30: MOLECULAR DIAGNOSIS AND DETECTION OF THE ANTIBIOTIC RESISTANCE PATTERN IN METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS(MRSA) ISOLATED FROM PATIENTS HOSPITALIZED IN RASHT HOSPITALS.

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**Background and Aim:** Meticillin resistant Staphylococcus aureus (MRSA) has become one of the major public-health concerns in recent years due to resistance to antimicrobial drugs and agents.This Study aims to compare the traditional i.e. phenotypic method with the molecular method in determination of MRSA strains in clinical patient samples from some hospitals in Rasht.

**Methods:** A phenotypic method was performed to identify MRSA strains. The antibiotic resistance pattern of MRSA strains was done using disc diffusion method against seven antibiotics based on CLSI protocol. Then, DNA was extracted from isolates and PCR was performed with specific primers to mecA gene. Data were analyzed using SPSS 20 software.

**Results:** The results of this study, showed that 69 (90.8%) out of 76 isolates of Staphylococcus were S.aureus. The rate of MRSA strains in the phenotypic and PCR methods were 71% and 62.3%, respectively. Most of S. aureus (50.7%) were isolated from wound samples. Furthermore, the highest frequency of MRSA (62.8%) was isolated from wound.

**Conclusion:** The findings showed that the prevalence of MRSA was remarkable in the hospital samples. That is a serious warning for treatment of infections caused by this bacterium. One possible cause of the high incidence of MRSA may be the overdose of antibiotics for more effective treatments.As a result, monitoring and developing safe and effective infection control practices in these sectors are of great importance.

**Keywords:** **M**ethicillin-resistant Staphylococcus aureus (MRSA), disk diffusion, mecA gene

# P6 - 34: ASSESSMENT OF CONSUMPTION AND PUBLIC ATTITUDE ABOUT ANTIBIOTICS AND ANTIBIOTIC RESISTANCE IN MASHHAD AND QUCHAN

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**Background and Aim:** Microorganisms resistance to antibiotics due to misuse of them are increase, causes a reduction in therapeutic effect's rang of antibiotics and massive economical disadvantages. evaluating public opinion and their consumption manner is important in assessment of present situation. in this study a survey has been done to know antibiotic's misuses, quantitatively, to take action for deforming the antibiotic's consumption.

**Methods:** We recorded expressions of 244 persons from Mashhad and 192 persons from Quchan selected randomly among adult people, out of medical community, at 2016. data was collected by a questionnaire during 14 days and statistical analysis was done.

**Results:** In Mashhad, nearly 55% of people prefer to go to a physician when they become ill, child whom was taken to a physician 23% more than those who taken antibiotic without prescription prefer physician, no significant difference exist between people know disadvantages of misusing of antibiotic and people do not, people who prefer physician 18% more than those who prefer other ways complete their antibiotic's period ($P < 0.05$), nearly half of people do not complete their antibiotic's period whether it prescribed or not, results of Quchan is similar to Mashhad.

**Conclusion:** It seems more practical and theoretical educations and efficient considerations are needed in comparison to past to people learn correct consumption of antibiotics, apparently new considerations should be noticed about prescription of antibiotics because as instance bacteria's potential for resistance against various antibiotics is different apart from amount of their consumption.

**Keywords:** Drug resistance, drug misuse, drug overuse, antibiotics

# P7 - 41: BACILLUS STRAINS PRODUCING BETA-LACTAMASE DETECTION IN HOSPITAL ENVIRONMENT USING ACIDOMETRIC TEST

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**Background and Aim:** Bacillus genus is a Gram-positive bacterium that exhibit in every natural environment. Much disease such as anthrax, abscesses, bacteremia/septicemia, wound and burn, respiratory and urinary tract infections is related to Bacillus genus. Bacillus species may exacerbate infections by producing toxins and metabolites such as penicillinase (Beta-lactamases) that interfere with treatment. The aim of this study was to determine the rate of Bacillus genus producing the beta-lactamase in the Besat hospital, Sanandaj city, Kurdistan province, Iran 2015.

**Methods:** In this cross-sectional study, 158 sterile swabs applied for samples taken in hospital environment. Microbiological test for Bacillus strains and acidometric test for production of beta-lactamase detection in them were used. The isolated Bacillus strains in test tubes containing penicillin G 5 million units and diluted phenol red pH indicator were added. This solution is purple and in the case of a beta-lactamase present, penicillin breaks to penicilloic acid and then solution color will be yellow. In end Information analyzed using SPSS16 software and Chi-square test ($p<0.05$).

**Results:** 201 bacterial strains isolated and 28 (13.93%) were Bacillus strains. Acidometric test showed that 7 (25%) of Bacillus strains were beta-lactamase-producing positive. Statistical results also revealed that in places with regularly cleaning, fewer strains of bacteria were isolated ($p<0.05$).

**Conclusion:** Beta-lactamase producing strains of Bacillus from hospitals environment in our study were proved. Therefore periodic monitoring of resistance and use the right detergent is very important at the hospital cleaning.

**Keywords:** Bacillus, Beta-Lactamase, Environment, Acidometric Test

# P8 - 56: BACTERIOCIN FROM BACILLUS SUBTILIS AS A NOVEL DRUG AGAINST DIABETIC FOOT ULCER BACTERIAL PATHOGENS

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**Background and Aim:** To isolate and identify Bacillus subtilis (B. subtilis) from soil and to characterize and partially purify the bacteriocin. To evaluate the antimicrobial activity against four diabetic foot ulcer bacterial pathogens.

**Methods:** Genotypic identification was done based on Bergey's manual of systemic bacteriology. Antimicrobial susceptibility test was done by Kirby-Bauer disc diffusion method. Colonies were identified by colony morphology and biochemical characterization and also compared with MTCC 121 strain. Further identification was done by 16S rRNA sequencing. Inhibitory activities of partially purified bacteriocin on all the DFU isolates were done by agar well diffusion method. The strain was identified to produce bacteriocin by stab overlay assay. Bacteriocin was extracted by organic solvent extraction using chloroform, further purified by HPLC and physical, and chemical characterization was performed.

**Results:** The four isolates showed high level of resistance to amoxyclav and sensitivity to ciprofloxacin. HPLC purification revealed that the extracts are bacteriocin. The phylogenetic tree analysis results showed that the isolate was 99% related to B. subtilis BSF01. The results reveled activity to all the four isolates and high level of activity was seen in case of Klebsiella sp.

**Conclusion:** Partially purified bacteriocin was found to have antimicrobial activity against the four diabetic foot ulcer bacterial pathogens, which can thus be applied as a better drug molecule on further studies. The strain B. subtilis are found to be safe for use and these antimicrobial peptides can be used as an antimicrobial in humans to treat DFU bacterial pathogens.

**Keywords:** 16S Rrna, Antimicrobial activity, Micrococcus leuteus, HPLC, Physicochemical characterization

# P9 - 83: FREQUENCY OF TYPE III SECRETION SYSTEM CYTOTOXIN-EXO T,EXOS GENES AMONG PSEUDOMONAS AERUGINOSA AND RESISTANSE OF ANTIBIOTICS IN BURN PATIENTS FROM ZARE HASPITAL- SARI

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**Background and Aim:** One of the most important factors of the burn infections in the hospitals is Pseudomonas aeruginosa that some of them are imported into the host cells by type 3 secretion system. The aim of this study was evaluated the frequency of the coding genes for cytotoxin of ExoT and ExoS among clinical samples of Pseudomonas aeruginosa isolated from the burn patients.

**Methods:** In this descriptive cross sectional study, within three months, the wounds of 80 burned patients of Zare Hospital were sampled during April, May, and June 1395. After identification by biochemical tests, 18 isolates of P.aeruginosa was isolated. ExoT and ExoS exotoxin identification was performed by polymerase chain reaction (PCR) molecular method. Antibiotic susceptibility patterns of isolates to 8 antibiotics were investigated. Data were analyzed using statistical method.

**Results:** Among 18 isolates separated of P. aeruginosa, 15 samples have an exoT gene. While 14 samples of isolates have exoS gene.Most antibiotic resistance was related to antibiotics cephalexin,Cotrimoxazol, Cefazolin and Ampicillin. Lowest antibiotic sensitivity was related to antibiotics, Impanel, ceftriaxone and Amikacin.

**Conclusion:** leads to the infection creation in patients with burn wound. Given that the existence of ExoT and ExoS cytotoxin genes in72.5% of isolates of Pseudomonas aeruginosa, and on the other hand, because these isolates were resistant to most antibiotics tested, the importance of these genes in the process of burn infections was indicated and according to the less frequency of exoS genes in burn infection, less the importance of this gene in burn infection also was expressed

**Keywords:** Pseudomonas aeruginosa, Burn infection, secretory cytotoxin ExoS, ExoT, Resistance of antibiotics

# P10 - 84: A REVIEW ON VARIOUS ANTIBIOTIC RESISTANCE MECHANISMS IN ACINETOBACTER

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**Background and Aim:** Multidrug resistant (MDR) microorganisms are one of the biggest healthcare challenges in 21st centuries. Over the last decades, member of the genus Acinetobacter (Acinetobacter baumannii) have emerged as bacterial opportunistic pathogens, in particular, as challenging nosocomial pathogens because of the rapid evolution of antimicrobial resistances. Based on recent estimates, over than 50% of A. baumannii isolates are carbapenem-resistant, including resistance to fluoroquinolones and carbapenems, the cationic peptide antibiotic colistin (polymyxin E) has become a last defense line in treatment of infections caused by MDR A. baumannii strains.

**Methods:** Various resistance mechanisms like OXA-type carbapenemases, aminoglycoside-modifying enzymes (AMEs), Extended-spectrum beta-lactamases (ESBLs) and AdeABC efflux pump are found in Acinetobacter.

**Results:** Most of the OXA-type carbapenemases showed only weak carbapenemase activity, carbapenem resistance may result from a combined action like an OXA-type carbapenemase and a secondary resistance mechanism such as porin deficiencies or over expressed efflux pumps. Aminoglycoside-modifying enzymes (AMEs) that acetylate adenylate, and phosphorylate aminoglycosides can inactivate aminoglycosides. Extended-spectrum beta-lactamases (ESBLs) underlying resistance to beta-lactams in A. baumannii with their hydrolysis by beta-lactamases, changes in penicillin-binding proteins (PBPs) that prevent their action, alterations to the structure and number of porin proteins that result in decreased permeability to antibiotics through the outer membrane of the bacterial cell. Efflux pump: The natural role of efflux is to remove chemicals that could potentially disorganize the cytoplasmic membrane; however, from the point of view of antibiotic resistance, efflux pumps have a potent ability to actively expel β-lactams, quinolones and even aminoglycosides.

**Conclusion:** Overuse of antibiotics must be prevented.

**Keywords:** Antibiotic resistance, Acinetobacter, Multidrug resistant

# P11 - 87: FREQUENCY OF VARIOUS TYPES OF BETA-LACTAMASE ENZYMES IN ESCHERICHIA COLI STRAINS ISOLATED FROM URINE SAMPLES IN ALIABAD

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**Background and Aim:** Beta-lactam resistance via production of beta-lactamase enzymes is rising in Gram negative bacilli. The aim of this study was to assess frequency of β-lactamase enzymes, including extended spectrum β-lactamases (ESBLs), Metallo-β-lactamase (MBL), and AmpC beta-lactamase in Escherichia coli isolated from urinary tract infections (UTI).

**Methods:** In this study from February to July 2016, midstream urine samples were collected from patients suspicious of UTI referred to laboratories in Aliabad, Iran. In positive samples E. coli strains were identified by biochemical tests and their antibiotic resistance pattern was determined by disk diffusion method. Then, phenotypic confirmatory test was performed for detection of ESBLs, MBL and AmpC Beta-lactamases producers.

**Results:** Out of 7800 urine samples, 250 E. coli strains were isolated from the positive samples. The majority of the isolates (more than 90%) were resistant to Ampicillin and Amoxicillin. However, Imipenem was an effective antibiotic among the isolates. The frequency of the ESBLs, MBL and AmpC Beta-lactamases producers were determined 40%, 16.8% and 30%, respectively.

**Conclusion:** In this study, the high frequency of MBL and AmpC Beta-lactamases compared with previous studies, may suggest the uptrend resistance of bacteria to cephalosporins and carbapenems. This could be a great impact on the health system, hospitalization cases and even death of hospitalized patients. It seems that continuous monitoring and early detection can help in resistant control and high achievement treatment.

**Keywords:** Beta-lactamases, Escherichia coli, Frequency, urine samples

## P12 - 94: DETECTION OF KLEBSIELLA PNEUMONIAE CARBAPENEMASE (KPC) GENE AMONG CLINICAL ISOLATES OF KLEBSIELLA PNEUMONIAE AT BANDAR ABBAS

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**Background and Aim:** Klebsiella pneumoniae producing KPC has emerged as a global public health concern and these bacteria are usually resistant to a broad spectrum of antimicrobial agents. The objective of this study was to evaluate the antimicrobial susceptibility pattern, phenotypic and genotypic detection of KPC among Klebsiella pneumoniae clinical isolates at Bandar Abbas.

**Methods:** A total of 100 non duplicate Klebsiella pneumoniae isolates were collected from different clinical specimens from two teaching hospitals at Bandar Abbas. Antimicrobial susceptibility testing was carried out by disc diffusion method according to CLSI recommendation. Phenotypic detection of KPC was performed by boronic acid disk test. All isolates were screened for KPC gene using Polymerase Chain Reaction (PCR) with specific primer.

**Results:** According to the antimicrobial susceptibility pattern, doripenem was the most effective antimicrobial agent and 89% of isolates were sensitive to this drug. High resistance rate was observed for ampicillin (98%). The rate of resistance to other antibiotics was as follow: piperacillin 53%, cefazolin 50%, cefotaxime 49%, cefuroxime 48%, ceftriaxone 47%, aztreonam 42%, tobramycin 36%, ciprofloxacin 32%, gentamicin 26%, ertapenem 10%, imipenem and meropenem 7%. No positive result was observed for boronic acid combination test and all isolates were considered as KPC negative. No PCR product was detected for KPC gene.

**Conclusion:** Fortunately in this study all Klebsiella pneumoniae isolates were negative for KPC by phenotypic and PCR method. Doripenem was the most effective antimicrobial agent and can be used as treatment of choice for infection caused by Klebsiella pneumoniae in our hospitals.

**Keywords:** Klebsiella pneumoniae Carbapenemase, Antimicrobial resistance

# P13 - 96: STUDY THE EFFICACY OF ANTIMICROBIAL ACTIVITIES OF EIGHT CLINICALLY APPLIED DISINFECTANTS AGAINST CLINICAL ISOLATED OF ENTEROCOCCI AND PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Hospital-acquired infections are among the most significant reasons of human mortality world-wide which can be controlled by efficient application of suitable disinfectant for hospital setting. The main goal of the present study was to determine the efficacy of eight routinely used hospital disinfectants against clinical isolates.

**Methods:** In our descriptive study, in the first step the antibiogram assay of 99 clinical isolates enterococci and Pseudomonas aeruginosa were determined. Then, minimum inhibitory concentration and minimum bactericidal concentration of isolates against Povidone Iodine 10%, Ethanol 70%, Savlon 3.2%, Deconex51Gastro, Procept Floor, Septo med, Surfanious and Gigasept AF were evaluated. Furthermore, the efficacy of disinfectants was reevaluated in presence of 5% (w/v) Bovine Serum Albumin.

**Results:** The results showed that Septo med and Surfanious are the most and less potent disinfectants against clinical isolates, respectively. It is also resulted that Povidone Iodine is the most effective choice among the conventional disinfectants in this study. Clearly, addition of 5% organic substances reduced the efficacy of selected disinfectants significantly.

**Conclusion:** Novel quaternary ammonium compounds are the most applicable choice for disinfection of hospital surfaces and instruments in this study.

**Keywords:** Hospital disinfectants, enterococci, Pseudomonas aeruginosa, clinical isolates, MBC, antibiogram

## P14 - 115: DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERNS IN SALMONELLA TYPHIMURIUM ISOLATED FROM POULTRY FLOCKS

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**Background and Aim:** Salmonella continues to be one of the most common food-borne pathogens from a public health standpoint. In recent years an increase in antimicrobial drug resistance in salmonella Typhimurium has been observed. The aim of this study was to determine antibiotic resistance pattern in S.Typhimurium isolated from poultry flocks.

**Methods:** All S.Typhimurium isolates (n=23) were subjected to in vitro antibiotic susceptibility testing against eight antibiotics of different classes. Disk diffusion method of Kirby-Bauer was used following the guidelines of Clinical and Laboratory Standards Institute. Antibiotics used in the study included cefixime (5 µg/disc), chloramphenicol (30 µg/disc), ciprofloxacin (5 µg/disc), enrofloxacin (5 µg/disc), furazolidone (100 µg/disc), gentamicin (10 µg/disc), imipenem (30 µg/disc) and trimethoprim/sulfamethoxazole (1.25/23.75 µg/disc).

**Results:** The highest antimicrobial resistance was detected against chloramphenicol (52.17%), followed by furazolidone (26.08%) and trimethoprim/sulfamethoxazole (21.73%). All isolates were sensitive to ciprofloxacin (100%) followed by gentamicin, imipenem (95.65%), cefixime (91.30%), enrofloxacin (82.60%), trimethoprim/sulfamethoxazole (78.26%), chloramphenicol (47.82%), and furazolidone (13.04%). Among the isolates, seven (30.43%) were resistance to one antibiotic and seven (30.43%) were resistant to two or three antibiotics and were regarded as Multi-Drug Resistant (MDR) strains.

**Conclusion:** It was concluded that S.Typhimurium isolates revealed a multiple antibiotic resistances which due to the uncontrolled use of antibiotics in poultry flocks that cause destruction of sensitive bacteria and selection of resistance species to multiple antibiotics.

**Keywords:** Salmonella Typhimurium, Multi-Drug Resistant, Poultry

# P15 - 142: CLASS 1 INTEGRONS IN NON-CLONAL MULTIDRUGRESISTANT ACINETOBACTER BAUMANNII FROM IRAN, DESCRIPTION OF THE NEW BLAIMP-55 ALLELE IN IN1243

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**Background and Aim:** Infections and outbreaks caused by multidrug-resistant Acinetobacter baumannii (MDR-AB) are prevalent and have been reported worldwide over the past 20 or more years. Class 1 integron in MDR-AB plays an important role in the spread of antibiotic resistance in clinical settings. This study has been conducted to evaluate the detection of metallo-b-lactamase, characterization of class 1 integron and determination of clonal relatedness among A. baumannii hospital isolates.

**Methods:** Sixty-five clinical isolates of MDR-AB were recovered from two Iranian hospital's intensive care units from February to August 2013. Integrase (intI1) and blaIMP genes were detected in 70.8% (n=46/65) and 9.23% (n=6/65) of the isolates using PCR assay, respectively. No other metallo-b-lactamase genes (blaVIM, blaSIM and blaNDM) were detected. PCR sequencing of integron gene cassette revealed the following arrays: blaOXA10-aacA4-blaIMP-55-cmlA5 (as a novel array was designated In1243), aacC1 and aadA1. Analysis of blaIMP gene revealed a new allele designated as blaIMP-55.

**Results:** Gene transfer experiment by conjugation showed the 36 kb conjugative plasmid harbouring In1243. The clonal assessment by repetitive extragenic palindromic PCR demonstrated a high-degree relatedness among the strains, but strains harbouring In1243 displayed a different repetitive extragenic palindromic PCR profile.

**Conclusion:** In this study, we found that a novel class 1 integron (In1243) that encoded a new blaIMP allele resided on a transferable plasmid in non-clonal strains of MDR-AB.

**Keywords:** A. baumannii, IMP resistance, Integrons class 1

# P16 - 143: PREVALENCE OF CLASS 1, 2 AND 3 INTEGRONS AND BIOFILM FORMATION IN PSEUDOMONAS AERUGINOSA AND ACINETOBACTER BAUMANNII AMONG ICU AND NON-ICU PATIENTS

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**Background and Aim:** Infections caused by Pseudomonas aeruginosa or Acinetobacter baumannii are of greatest concern for hospitalized patients, particularly those in intensive care units (ICUs). The aims of this study were to investigate the prevalence of integrons and biofilm formation among P. aeruginosa and A. baumannii isolates collected from ICU and non-ICU inpatients.

**Methods:** A total of 90 P. aeruginosa and 90 A. baumannii isolates were recovered from patients admitted into diverse units of Shahid Mohammadi hospital in Bandar Abbas during January and December 2014. Bacterial identification was carried out by phenotypic methods and PCR. Antibiotic susceptibility was measured by disk diffusion assay. The presence of Class 1, 2 and 3 integrons were evaluated by multiplex-PCR. Biofilm quantification was done by microtiter method.

**Results:** The highest number of isolates (48%) were recovered from ICU patients. 81% of P. aeruginosa isolates were sensitive to piperacillin/tazobactam and ticarcillin, while 60% were resistant to third generation of cephalosporins. In case of A. baumannii, all the isolates were sensitive to colistin, but 98% were resistant to other antibiotics ($p \leq 0.05$). Susceptibility to ceftazidime, ticarcillin, imipenem, and piperacillin/tazobactam were higher among isolates obtained from non-ICU patients. Class 1 integron was detected in 13.3% of the P. aeruginosa and 40% of the A. baumannii isolates, while Class 2 integron was harbored by 7 and 6.6% of the isolates respectively. Furthermore, 23% of the A. baumannii and 12% of the P. aeruginosa isolates showed strong biofilm activity.

**Conclusion:** Class 1 integron-positive isolates were resistant to three classes of antibiotics and predominantly observed in specimens collected from ICU patients showing strong biofilm.

**Keywords:** ICU, Antibiotic resistance, Integrons, Multiplex-PCR.

# P17 - 145: DETECTION OF CARBENICILLIN HYDROLYSING (CARB) TYPE OF ESBL ENZYME IN ACINETOBACTER BAUMANNII STRAINS ISOLATED FROM BACTERIMIC AND UTI PATIENTS

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**Background and Aim:** Aim of this study was to find out the antibiotic resistance pattern of hospital associate Acinetobacter baumannii species isolated from bacterimic and urinary tract infected patientsand to determine the type of β-lactamase produce by the isolates.

**Methods:** Six strains of A. baumannii were isolated from hospital blood and urine cultures. The genuinety of the isolates was determined by chromosomal transformation assay and by biochemical tests. Preliminary antibiotic sensitivity test was carried out by quick disk diffusion break point assay and MIC to different antibiotics was performed by agar dilution methods. β-Lactamase test was carried out by Macro-Iodometric method.Substrate hydrolysis in presence and absence of inhibitors;Sulbactam, para-chloromercuribenzoate (p-CMB), Calvulanic acid,Cloxacillin and NaCl were also carried out.

**Results:** A. baumannii isolates were resistant to almost all penicillins (MIC ≥ 256µg/ml). β-lactamase test was positive for blood isolates. The highest rate of substrate hydrolysis was achieved when Carbenicillin was used as substrate (116µmol), while lowest rate of hydrolysis was achieved when Cloxacillin was used as substrate (50.2µmol) [$p < 0.05$]. The rate of substrate hydrolysis was adversely affected in presence of Sulbactam, Clavulanic acid and NaCl (3.5, 3.0, 3.6 µmol) respectively.

**Conclusion:** The penicillins hydrolysis was not affected by p-CMB or Cloxacillin. MIC in presence of β- lactamase inhibitors Clavulanic acid and Sulbactam decreased to 25µg/ml.

**Keywords:** A. baumannii, antibiotic resistance, β-lactamase, penicillins hydrolysis

# P18 - 156: EVALUATION ANTI-ULCEROGENIC ACTIVITY OF EXTRACT OF MATRICARIA CHAMOMILLA AGAINST HLICOBACTER PYLORI :A REVIEW

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**Background and Aim:** Helicobacter pylori (HP) is one of the most widespread infections in human worldwide that persistently infects up to 50% of the world's population. However, resistance of the organism to antibiotics is a growing global concern, which needs public health attention. This and other factors, including poor patient compliance, the significant cost of combination therapy, reveals the need to seek alternative available means of eradicating or preventing infections. Phytomedicine has shown great promise in the treatment of intractable infectious diseases in Africa. Matricaria chamomilla (MC), is one of the most widely used medicinal plants, the extract of MC flowers was evaluated for anti-ulcerogenic activity and acute toxicity profile.

**Methods:** We searched the following electronic databases with use of keywords such as Matricaria chamomilla, extract, Helicobacter pylori, anti-ulcerogenic activity and mechanism in search engine such as sciencedirect ,pubmed to identify reports of relevant MC and H. pylori.

**Results:** Methanol extracts of MC (flowers) and Ginkgo biloba (leaves) had a MIC > 100 microg/mL against the gram-negative bacterium HP. All extracts produced a dose dependent anti-ulcerogenic activity associated with a reduced acid output and an increased mucin secretion, an increase in prostaglandin E2 release and a decrease in leukotrienes.

**Conclusion:** The extracts from the matricaria chamomilla , singly or combined with other plants have anti-ulcerogenic activity. But the methodology of ulcer estimation received less attention. Moreover, these medicinal herbs may afford lead compounds which could be beneficial for future drug development especially against resistant H. pylori strains.

**Keywords:** Matricaria chamomilla, extract, Helicobacter pylori, anti-ulcerogenic activity, mechanism

# P19 - 159: THE EFFECT OF ALOE VERA EXTRACT BARBAD ON TWO URINARY TRACT INFECTIONS

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**Background and Aim:** Nowadays, with the development of drug resistance, researchers have been using medicinal plants. aloe vera Miller Barbadnsys is a medicinal plant in the central province of culture. In this research, effects of aloe vera on Staphylococcus aureus and Klebsiella pneumoniae isolated from patients referred to medical centers in Arak is investigated.

**Methods:** Different strains of the bacteria Staphylococcus, Klebsiella pneumoniae were collected from medical centers in Arak. aloe vera extract by maceration took place. Microbial assessment was conducted using micro dilution methods and wells.

**Results:** Inhibition diameters of three antibiotics Cotrimoxazole, Amoxicillin and Penicillin Antibiotic measured using extracts of Aloe vera also became the assay of the minimum inhibitory concentration, disk diffusion was recorded.

**Conclusion:** According to the results of tests carried out showed that two to three antibiotics target bacterial resistance are almost as well, aloe vera any antibacterial effect on the bacteria S. aureus, k. pneumoniae, and also did not create growth inhibition zone diameter.

**Keywords:** Staphylococcus aureus, Klebsiella pneumoniae and Aloe Vera

# P20 - 162: FREQUENCY OF CARBAPENEM- RESISTANT KLEBSIELLA PNEUMONIAE (CRKP) ISOLOLATED FROM PATIENTS WHO REFERRED TO TALEGHANI HOSPITAL ABADAN- YEAR 2014

Seyedeh Zohreh Momeni, Ahmad Farajzadeh Sheikh

**Background and Aim:** Metallo-beta-lactamases (MBLs), is one of the enzymes that hydrolyze Penicillins, Cephalosporins and Carbapenems. Nowadays, the carbapenem-resistant klebsiella pneumoniae is considered as one of the most important causes of nosocomial infections and have created various health problems in the world. The purpose of this study is to determine the prevalence of MBL which producing k .pneumoniae genes in clinical samples from patients referred to Taleghani hospital of Abadan in the period 1392 to 1393

**Methods:** First, detection of K. pneumoniae colonies resistance to the common nine-antibiotics was performed by disk diffusion test, according to CLSI protocols. Then, the identification of production of Metallo-beta-lactamases was detected, using IPM- EDTA combined disk method. Finally, the blakpc gene produced by the isolated strains was identified by using PCR method and specific primers.

**Results:** Among 144 cases of isolated K. pneumoniae isolates, the highest and lowest frequencies of resistance in Klebsiella pneumoniae are related to antibiotic amoxicillin (127 cases, 88.1%) and amikacin (13 cases, 9.2%). The results of the combined disk method showed that 27 isolates (18.75%) of all samples are eligible Metallo-beta-lactamase, which 14 cases (51.8%) showed blakpc gene, using PCR method. Most of the isolates were separated from urine samples of patients admitted to ICU and urology segments.

**Conclusion:** According to emergence of Metallo-beta-lactamases and also considering the existence of blakpc gene in K. pneumoniae, it is necessary to change the pattern of use of antibiotics and also prevent the spread of such infections in the hospitals.

**Keywords:** klebsiella pneumonia , Carbapenem, Metallo-beta-lactamase, IPM- EDTA Combined disk method, blakpc

# P21 - 163: EXTENDED-SPECTRUM B-LACTAMASE (CTX-M) IN ESCHERICHIA COLI ISOLATES FROM HEALTHY HUMAN FECAL IN RURAL- AREAS OF QAZVIN, IRAN

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**Background and Aim:** Escherichia coli has special importance because of causing various disease and increasing antibiotic resistance and transferring resistance gene to other bacteria. Colonization of these bacteria in gut is necessary for ESBL- producing micro organisms . Strains that have ESBL gene usually have multidrug resistance and mostly carry resistance gene to antibiotics like aminoglycosides, sulfametoxazole+trimetoprime and floroquinolones. CTX-M family are most extended enzyme among ESBL genes and are most prevalent. Aim of study The aim of study was determination of CTX-M among ESBL-producing Escherichia coli isolated from healthy human fecal.

**Methods:** A total of 150 stool samples from healthy human were investigated. Susceptibillity of β- lactamase-producing Escherichia coli to 12 antimicrobial agents was investigated by disk diffusion method. These isolates were screened by DDST method. CTX-M genes in ESBL positive strains were identified by multiplex PCR. Primers used in PCR were from groups 1, 2, 9, 8/25.

**Results:** From 150 (%34/6) samples, 52 isolates were ESBL-producer. Most of isolates were resistance to cefotaxime, ceftazidime, cotrimoxazole, tetracycline and nalidixic acid. Results of PCR analyze showed that CTX-M1 group is the most prevalent (%80) among ESBL-producing Escherichia coli isolates.

**Conclusion:** We concluded that most of isolates showed multidrug resistance and less resistance was observed against amikacin and carbapenems, so we can choice these drugs in treatment of Escherichia coli infections. High prevalence of CTX-M1 gene among Escherichia coli isolates and its relation with multidrug resistance is alarming, so, controlling ESBL-producing Escherichia coli is important in order to avoid from extending resistant isolates.

**Keywords:** E.coli, CTX-M, ESBL, fecal carriers

# P22 - 169: THE STUDY OF THE PREVALENCE OF SHV , CTXM AND PER BETALACTAMASE GENES IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII FROM THE SHAHID MOHAMMADI HOSPITAL IN BANDAR ABBAS.

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**Background and Aim:** Acinetobacter baumannii is one of the most important agents of nosocomial infections and has a crucial role as opportunistic pathogens that generally are resistant to many classes of antibiotics such as cephalosporines. Beta- lactamases enzymes are the main causes of resistance to cephalosporins. Objectives: This study aimed to determine the prevalence of antibiotic resistance and β- lactamase genes including blaPER, blaCTXM, blaTEM, blaSHV in clinical isolates of A. baumannii in Shahid Mohammadi hospital during the period March - October2016.

**Methods:** In this study, clinical isolates were identified by biochemical methods to genus level and PCR for bla OXA-51 and beta-lactamase encoding genes was carried out . Antibiogram by disk diffusion method was carried out for 18 antibiotics.

**Results:** The prevalence of A. baumannii among 61 Acinetobacter was 93.4%. The most resistance to antibiotics including, piperacillin, cefepime, ceftriaxone, meropenem, ciprofloxasin, ticarcillin, ertapenem, cefotaxime, ceftazidime, doripenem(100%), followed by imipenem (96.4%) and gentamicin (87.7%), doxicycline (82.4%),amikacin (77.1%), tobramicin (73.6%), ampicillin-sulbactam(45.4%) were observed. The prevalence of β lactamses genes was as follow: blaTEM 23(40.3%), blaSHV 5(8.7%), blaPER 2(3.5%) and blaCTXM, not found in any of isolates.

**Conclusion:** The results of this study indicated increasing resistance of A. baumannii to these antibiotics. Despite of low prevalence of resistance genes against cephalosporins, high resistance to these antibiotics indicated over use of antibiotics in hospital which lead to activation of efflux pumps in bacterial nosocomial agents.

**Keywords:** Acinetobacter baumannii, Beta- lactamases, cephalosporin

# P23 - 173: PREVALENCE OF SHV GENE IN PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS

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**Background and Aim:** Pseudomonas aeruginosa recently became as one of the most commonly microorganisms isolated from urinary tract infections. Unfortunately, antibiotic resistance has become increasingly as a pressing clinical issue in many countries. Thus resistant Pseudomonas aeruginosa is a major concern in medical practice.

**Methods:** For identifying antibiotic resistance, 500 urine samples have been collected from patients with UTI at 2 hospitals in Tehran. To detect 80 P.aeruginosa bacteria, by identifying isolated species using gram stain and biochemical tests. In vitro susceptibility of 80 P. aeruginosa isolates to 13 antimicrobial agents colistin, amoxicillin, ceftriaxone, cefixime, sulfonamide, cephalexin, co-trimoxazole, gentamicin, nalidixic acid, ciprofloxacin, nitrofurantoin, amikacin, and imipenem was performed by Kirby-Bauer's Disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI, 2016) guideline. PCR method was used to identify SHV Gene in 80 P. aeruginosa strains.

**Results:** PCR and sequence analysis showed that 35 (43.75%) isolates produced bla SHV Gene. In vitro susceptibility test showed that all of strains were resistant to amoxicillin. The rates of resistance to the majority of tested antibiotics varied among 72% to 100 %, with the exception of imipenem (22.7 and %) and colistin (0.0 %). Our results showed that the frequency of SHV Gene was high in patients with UTI.

**Conclusion:** These data confirmed that the frequency of SHV Gene was high among P. aeruginosa isolated from patients with UTI. It is very important to prevent dissemination of resistant isolates in health care settings.

**Keywords:** SHV Gene, urinary tract infection, antimicrobial resistance Pseudomonas aeruginosa

# P24 - 175: PREVALENCE OF BLACTX-M GENE IN E. COLI ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS

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**Background and Aim:** E.coli is one of the most commonly microorganisms isolated from urinary tract infections. Unfortunately, antibiotic resistance has become increasingly as a pressing clinical issue in many countries. Thus resistant E.coli is a major concern in medical practice.

**Methods:** For identifying antibiotic resistance, 500 urine samples have been collected from patients with UTI at 2 hospitals in Tehran. To detect 176 E.coli bacteria, by identifying isolated species using gram stain and biochemical tests. 80 E.coli isolates were confirmed as Extended-spectrum beta lactamase (ESBL-positive) by double disc synergy test. In vitro susceptibility of ESBL isolates to 15 antimicrobial agents amoxicillin, penicillin, ceftazidime, cefotaxime, cefoxitin, ceftriaxone, cefixime, cephalexin, co-trimoxazole, gentamicin, nalidixic acid, ciprofloxacin, nitrofurantoin, amikacin, and imipenem was performed by Kirby-Bauer's Disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI, 2016) guideline. PCR method was used to identify bla CTX-M gene in 80 ESBL positive strains

**Results:** PCR and sequence analysis showed that 39 (48.75%) isolates produced bla CTX-M genes. In vitro susceptibility of ESBL producing E.coli showed that all of them were resistant to amoxicillin and penicillin. The rates of resistance to the majority of tested antibiotics varied among 45% to 100 %, with the exception of amikacin (11.5%) and imipenem (1.5%). Our results showed that the frequency of bla CTX-M was strikingly high in patients with UTI.

**Conclusion:** These data confirmed that the frequency of bla CTX-M genes was high among E.coli isolated from patients with UTI

**Keywords:** ESBL, Beta lactamase, urinary tract infection, antimicrobial resistance

# P25 - 176: ANTIBIOTIC RESISTANCE PATTERNS OF STAPHYLOCOCCUS AUREUS(MRSA) ISOLATED FROM WOUND

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**Background and Aim:** Staphylococcus aureus(MRSA) recently became as one of the most commonly microorganisms isolated from wound infections. Unfortunately, antibiotic resistance has become increasingly as a pressing clinical issue in many countries. Thus resistant S. aureus (MRSA) is a major concern in medical practice

**Methods:** For identifying antibiotic resistance, 500 wound samples have been collected from patients at 3 hospitals in Tehran. To detect 80 Staphylococcus aureus(MRSA) bacteria, by identifying isolated species using gram stain and biochemical tests. In vitro susceptibility of S. aureus(MRSA) isolates to 13 antimicrobial agents amoxicillin, penicillin, ceftazidime, cefotaxime, cefoxitin, ceftriaxone, cefixime, cephalexin, co-trimoxazole, gentamicin, ciprofloxacin, methicillin, and imipenem was performed by Kirby-Bauer's Disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI, 2016) guideline. PCR method was used to identify bla CTX-M gene in 80 S.aureus(MRSA) strains

**Results:** PCR and sequence analysis showed that 7 (8.75%) isolates produced bla CTX-M genes. In vitro susceptibility of S. aureus(MRSA) showed that all of them were resistant to amoxicillin and penicillin. The rates of resistance to the majority of tested antibiotics varied among 52% to 100 %, Our results showed that the frequency of bla CTX-M was 8.75% in the patients.

**Conclusion:** The trend of multidrug-resistant profile has been associated with bla CTX-M gene is alarming. Therefore, it is very important to establish a routine screening of ESBL in clinical isolates to prevent dissemination of resistant isolates in health care settings.

**Keywords:** Staphylococcus aureus (MRSA), Beta lactamase, wound infection, antimicrobial resistance

# P26 - 177: ANTIBIOTIC RESISTANCE PATTERNS OF PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS

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**Background and Aim:** Pseudomonas aeruginosa recently became as one of the most commonly microorganisms isolated from urinary tract infections. Unfortunately, antibiotic resistance has become increasingly as a pressing clinical issue in many countries. Thus resistant Pseudomonas aeruginosa is a major concern in medical practice.

**Methods:** For identifying antibiotic resistance, 500 urine samples have been collected from patients with UTI at 2 hospitals in Tehran. To detect 80 Pseudomonas aeruginosa bacteria, by identifying isolated species using gram stain and biochemical tests. In vitro susceptibility of 80 Pseudomonas aeruginosa isolates to 16 antimicrobial agents colistin, amoxicillin, penicillin, ceftazidime, cefotaxime, cefoxitin, ceftriaxone, cefixime, cephalexin, co-trimoxazole, gentamicin, nalidixic acid, ciprofloxacin, nitrofurantoin, amikacin, and imipenem was performed by Kirby-Bauer's Disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI, 2016) guideline. PCR method was used to identify bla CTX-M gene in 80 Pseudomonas aeruginosa strains.

**Results:** PCR and sequence analysis showed that 12 (15.0%) isolates produced bla CTX-M genes. In vitro susceptibility test showed that all of strains were resistant to amoxicillin and penicillin. The rates of resistance to the majority of tested antibiotics varied among 69% to 100 %, with the exception of imipenem (22.7 and %) and colistin (0.0 %). Our results showed that the frequency of bla CTX-M was moderate in patients with UTI.

**Conclusion:** These data confirmed that the frequency of bla CTX-M genes was moderate among Pseudomonas aeruginosa isolated from patients with UTI.

**Keywords:** ESBL, Beta lactamase, urinary tract infection, antimicrobial resistance Pseudomonas aeruginosa

# P27 - 184: STUDY OF PREVALENCE OF BROAD-SPECTRUM BETALACTAMASE IN KLEBSIELLA PNEUMONIA STRAINS ISOLATED OF PATIENTS AND DETERMINATION OF THEIR DRUG RESISTANCE PATTERN

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**Background and Aim:** Since 80 decades, oxyimino cephalosporins have been used to treat gram negative bacteria infectious, these new groups of antibiotics were resistance to the hydrolytic action of beta lactamases. In the early 90 decades, resistance of Extended Spectrum Beta-Lactamases enzymes produced by gram negative bacteria, showed increase to cephalosporins like ceftazidime and cefotaxime which resistance to cefotaxime was more than ceftazidime. the resistance to antibiotics is different in countries, regions and ever hospitals. Our research's purpose is to study the prevalence of these enzymes in collected specimens from hospitals in north of country.

**Methods:** Our Target population were Klebsiela species isolated from hospitals in north of country. Susceptibility evaluation carried out by Disk diffusion technique and Confirmation of enzyme Existence was performed by Double Disk Synergy Test. using statistical methods, 61 samples were chosen for study.

**Results:** Klebsiela strains showed the most resistance to Ampicillin (91.8%), Cefotaxime (60.65%), Cotrimoxazol (55.73%). Klebsiela strains showed the most sensitivity to the Antibiotics Imipenem (77.05%), Piperacilin (70.5%), Ciprofloxacin (65.58%). Antibiotic resistance with P-Value= 0.000 was significant. ESBLs producer strains showed the most resistance to Ampicillin (100%), Cefotaxime (100%) and the less resistance to Imipenem (47.4%), Piperacilin (47.4%).

**Conclusion:** According to the results and high resistant isolates is recommended that except emergency cases, before the use of antibiotics, antibiotic susceptibility assay is performed and detect the presence of these enzymes is common in medical laboratories.

**Keywords:** klebsiella pneumoniae, Antibiotic Resistance , ESBLs

# P28 - 187: HIGH FREQUENCY OF QNRB GENE AMONG KLEBSIELLA PNEUMONIAE ISOLATES RESISTANCE TO QUINOLONE ANTIBIOTICS

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**Background and Aim:** Qnr determinants (including QnrA, QnrB and QnrS) are the plasmid-mediated resistance mechanisms that play a significant role in fluoroquinolone resistance. The prevalence of these determinants is increasing worldwide. Therefore, we investigated these genes among Klebsiella pneumoniae isolates.

**Methods:** In this cross- sectional study, a total 110 non-duplicates of klebsiella pneumonia isolates were collected from three hospitals during 2016-2017. Resistance of isolates was investigated against five quinolone antibiotics by disk diffusion methods as recommended by Clinical and Laboratory Standards Institute (CLSI). The presence of qnrA, B and S genes were detected in resistance strains by PCR method.

**Results:** The results obtained from disk diffusion method revealed that 39%, 27.1%, 32.1%, 27.4% and 22.6% of the isolates were resistant to Nalidixic acid, Ciprofloxacine, Norfloxacine, Ofloxacine and Levofloxacine respectively. Of these 2.2%, 70% and 16.5% carried qnrA, qnrB and qnrS genes respectively.

**Conclusion:** Similar to another studies, high frequency of qnrB gene among isolates showed that Qnr determinant that carry on plasmid elements should be considered as a mechanism for resistance in Iran.

**Keywords:** Klebsiella pneumoniae, QnrA, qnrB, qnrS, resistance, quinolone

# P29 - 188: SURVEY OF THE PREVALENCE AND ANTIMICROBIAL SUSCEPTIBILITY OF ISOLATED MICROORGANISMS DETECTED FROM WOMEN GENITAL TRACT AFFECTED WITH PRETERM LABOR IN KERMAN AFZALIPOUR HOSPITAL

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**Background and Aim:** Microbial invasion of the female genital tract is terminated to induction of preterm labor. One the ways to prevent of that is antibiotic treatment to prevent genital colonization with microbes.

**Methods:** The samples were isolated from vaginal discharge of patients with preterm labor in Kerman Afzalipour Hospital.Then these isolates were identified by biochemical tests.

**Results:** From 50 samples, 79 isolates were detected, including: 52 Gram-positive bacterial: (Staphylococcus epidermidis, Staphylococcus saprophyticus, Micrococcus, Enterococcus, Corynebacterium and Bacillus) and 22Gram-negative:( Escherichia coli, Salmonella, Pseudomonas aeruginosa, Enterobacter spp., Yersinia, Citrobacter and Serratia) and 5 yeasts: (Candida albicans). The results of the antibiotic susceptibility of bacteria to antimicrobial was according to the most anti microbial susceptibility Staphylococcus epidermidis to vancomycin and cefazolin, Staphylococcus saprophyticus to vancomycin, cefazolin, ceftriaxone, amikacin and gentamicin, Micrococcus to ceftriaxone, Enterococcus to amikacin, Salmonella, Escherichia coli, Citrobacter, Serratia to gentamicin, Yersinia to gentamicin, cephalexin, ceftriaxone and vancomycin, Enterobacter to gentamicin, cephalexin, ceftriaxone and cefazolin, Bacillus to gentamicin, amikacin, cephalexin, ceftriaxone, cefazolin and vancomycin, Corynebacterium to gentamicin, amikacin, ceftriaxone, cefazolin and vancomycin and Candida albicans to fluconazole, clotrimazole and nystatin. also Metronidazole and clindamycin have not the appropriate sensitivity antimicrobial of these infections.

**Conclusion:** According to this research by detecting infections before and during pregnancy and also doing antibiogram pre-treatment antimicrobial, can be prevented of preterm delivery and its consequences such as neonatal sepsis, mother chorioamnionitis, maternal uterine infections and uterine incision site infection after cesarean.

**Keywords:** preterm labor, Gram-positive bacteria, Gram-negative bacteria, yeast, Antibiogram

## P30 - 191: MOLECULAR MECHANISMS OF ANTIBACTERIAL DRUG RESISTANCE

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**Background and Aim:** Antibiotic resistance, which is implicated in elevated morbidity and mortality rates as well as in the increased treatment costs, isconsidered to be one of the major global public health threats and the magnitude of theproblem recently prompted a number of international and national bodies to take actions to protect the public. Antibiotic resistance can occur via three general mechanisms: prevention of interaction of the drug with target, efflux of the antibiotic from the cell, and direct destruction or modification of the compound. Bacteria and other microorganisms use all of these mechanisms to evade the toxic effects of antibiotics. Recent research on the molecular aspects of these mechanisms, often informed by atomic resolution structures of proteins, enzymes and nucleic acids involved in these processes, has deepened our understanding of antibiotic action and resistance.

**Methods:** In this review we present some recent data on molecular mechanisms of antibiotic resistance.

**Results:** Knowledge of the molecular mechanisms of antibiotic resistance is essential for developing new approachesto overcome this problem. One possible approach is the development of inhibitors of resistance enzymes. These inhibitors can be administered as co-drugs with the antibiotics, thereby blocking resistance and rescuing the antimicrobial activity of the drugs. Another strategy to overcome resistance is to improve the delivery or otherwise enhance the accessibility of antibiotics to their sites of action.

**Conclusion:** All the alternative strategies to overcome resistance require expanded knowledge of the molecular mechanisms of antibiotic resistance, their origins and evolution, and their distribution throughout bacterial population

**Keywords:** Molecular mechanisms, Antibacterial drug resistance, Antibiotics

# P31 - 195: THE ANTAGONISTIC EFFECTS OF COMMERCIAL PROBIOTICS (KIDILACT,VITALACT,PROTEXIN) TO INHIBIT THE GROWTH OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS WITH AGAR WELL DIFFUSION METHOD

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**Background and Aim:** Methicillin-resistant Staphylococcus aureus (MRSA) is a nosocomial pathogen with high spread around the world. Infections caused by S. aureus are among the most common causes of morbidity and mortality worldwide. This bacteria is identified as a resistant pathogen and It has become a serious public health concern due to its resistance to antibiotic agents. According to the unique antibacterial properties of Lactic acid bacteria, the aim of this study is to evaluate the inhibitory effect of commercial probiotics against MRSA growth.

**Methods:** In this study, tablets were revived in BHI broth (24 h, 37°C, anaerobic). Then were cultured in MRS broth (7 days, 37°C, anaerobic). The probiotic cultures were centrifuged at 5000 rpm at 4°C and cell-free supernatant (CFS) was collected. Each supernatant was neutralized to PH 6.9 using NaOH 0.1 N. Overnight culture of MRSA was diluted to 10-3 and applied to Mueller-Hinton agar plates. Three 9-mm wells were made on each agar plate. 130 uL of each supernatant was added to wells. The antibiotic disk of vancomycin was placed as positive control. Plates were incubated (24 h, 37°C, anaerobic).

**Results:** The presence of an inhibition zone more than 18mm was observed. Some plates was measured more than vancomycin inhibition zone.

**Conclusion:** Each tablet contains various species of Lactobacilli and Bifidobacteria. These strains produce unknown antibiotics or bacteriocins that significantly inhibits the growth of MRSA. In general, various species of probiotics together have synergistic effect in inhibiting the growth of MRSA.

**Keywords:** Methicillin-resistant Staphylococcus aureus; Lactic acid bacteria; Probiotic

# P32 - 196: AN INVESTIGATION ON THE EFFECT OF COMMERCIAL PROBIOTICS (KIDILACT,VITALACT,PROTEXIN) ON THE MECA GENE EXPRESSION IN METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

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**Background and Aim:** The Increasing prevalence of methicillin-resistant Staphylococcus aureus has become a major public health concern. There is an urgent need for formation of alternative non-antibiotic strategies to eliminate this nosocomial pathogen. Lactic acid bacteria (LAB) have been studied to combat various pathogens for a long time.They produce safe and unique antimicrobial compounds that inhibite wide spread of disease-causing organisms. These antimicrobial production has no contribution in increasing antibiotic resistance. Therefore, the aim of this study is to investigate the effects of commercial probiotics on expression of antibiotic resistance gene (mec A) of MRSA.

**Methods:** Overnight culture of MRSA diluted to 10-3. 200 uL was added to BHI broth and co-cultured with 1 ml cell-free supernatants obtained from each tablets and added to medium, incubated (37°C, anaerobic, 96 hr). Then were used for RNA extraction, cdna synthesis and Real Time PCR test.

**Results:** Pathogen growth was significantly inhibited. Gene expression in all treatments indicated reduced expression rate of mecA gene.

**Conclusion:** Based on these experimental conditions The inhibitory potential of probiotics against MRSA growth was promising. probiotics produces compounds that have bactericidal and bacteriostatic properties on the pathogen. In general we hope Our research lead to discover probiotics which could be developed for the treatment of infectious diseases.

**Keywords:** Antimicrobial activity, Methicillin-resistant Staphylococcus aureus, Lactic acid bacteria, Probiotic

# P33 - 199: MOLECULAR STUDY OF BRO-1 AND BRO-2 GENES IN MORAXELLA CATARRHALIS CAUSING RESPIRATORY INFECTIONS WITH MULTIDRUG RESISTANCE IN CLINICAL SPECIMENS AND DETERMINING ANTIBIOTIC RESISTANCE PATTERN IN KAZEROON CITY

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**Background and Aim:** By treatment with antibiotics Moraxella Catarrhalis strains with MDR multi-resistant are increasing around the world. One of the ways of M. catarrhalis resistance to beta-lactam is to produce beta lactamase enzyme that has created many problems in the treatment of infections caused by this bacterium.Beta-lactamases of bro-1 and bro-2 genes are among these beta lactamases. The aim of this study is to investigate the molecular analysis of bro-1 and bro-2 genes in M. catarrhalis with multi-resistant strains isolated from clinical specimens in Kazeroon city.

**Methods:** Totally, 136 clinical samples collected from Baqerol Olum laboratory and Hospital Vali-EAsr, Kazeroun city during six months. M.catarrhalis isolates identified using phenotypic and genotypic (16SrRNA) methods. According to CLSI 2016 protocol the antibiotic susceptibility pattern was determined by disk diffusion method and producing ESBL producing isolates analysis was done by nitrocefin disk and Combined Disk Test (CDT). Finally the PCR molecular method was used for identifying bro-1 and bro-2 gene strains. The collected data were entered to whonet V5.6 software and analyzed.

**Results:** The results of this study showed that 10 strains of Moraxella catarrhalis isolated and of them seven strains were multi-drug resistance (MDR). All MDR strains had bro-1 (50%) and bro-2 (20%) genes.

**Conclusion:** Overall, our finding illustrated high frequency of occurrence of multiple antibiotic resistant M.catarrhalis in the clinical centers. In addition, the presence of bro-1, bro-2 genes in M. catarrhalis isolates showed their potential for production of beta-lactamase enzymes to induce resistant character to M. catarrhalis against betalactam antibiotics.

**Keywords:** Moraxella catarrhalis, bro gene, antibiotic resistance

# P34 - 203: MOLECULAR DETECTION OF KPC -PRODUCING KLEBSIELLA PNEUMONIAE ISOLATES IN SANANDAJ CITY, IRAN

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**Background and Aim:** The emergence of Klebsiella pneumoniae carbapenemase (KPC) -producing bacteria has become a significant global public health challenge. The purpose of this study was detection of KPC -producing Klebsiella pneumoniae (K. pneumoniae) isolates in Sanandaj city, Iran.

**Methods:** During a period from October 2015 to July 2016, 52 K. pneumoniae isolates were collected from general hospitals in Sanandaj city, Iran. After identification strains by biochemical testing disc-diffusion method was used to Antimicrobial susceptibility test. Detection of KPC –producting K. pneumoniae was carried out by PCR.

**Results:** Out of 52 K. pneumoniae collected the highest and lowest rates of resistance were related to Co-Trimoxazole 67.3 % and Amikacin 30.76 %. None of these strains detected KPC gene.

**Conclusion:** Carbapenem antibiotics are generally not effective against KPC-producing organisms. The best therapeutic approach to KPC-producing organisms has yet to be defined.

**Keywords:** Klebsiella pneumoniae carbapenemase (KPC), detection, Molecular

# P35 - 207: RELATION OF ANTIBIOTIC RESISTANCE IN DIABETIC AND NON-DIABETIC INPATIENTS WITH ESCHERICHIA COLI URINARY TRACT INFECTION IN GORGAN

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**Background and Aim:** Diabetes mellitus (DM) has been a major source of clinical problems. It is consensus that, individuals with DM have increased risk of most severe community acquired infections respiratory tract infections primarily, followed by UTI. The aim of this study is consideration of Relation of antibacterial resistance in Diabetic inpatients with E.coli Urinary tract infection(UPEC) in Gorgan.

**Methods:** A cross-sectional study carried out on 126 inpatients with urinary tract infection with Escheichia.coli (gram negative bacteria) in Gorgan. After culturing the samples in the media, Macconkey, Blood Agar and differential biochemical tests, bacteria were detected. For E.coli strain, antibiogram with Kirby-Bauer method based on CLSI standards were done with different antibiotics such as: Nalidixic acid, Nitrofurantoin, Gentamycin, Tetracyclin, Cotrimoazol, Cefazolin, Ciprofloxacin, Ceftazidim, cefotaxim, Ceftriaxone, Imipenem, Amikacin, Aztreonam, Cefepime, Pipracilin tazobactam, Meropenem and Levofloxacin .(prepared from MAST Co.) Then, results were studied and analyzed in SPSS18 program. in Statistical analysis $P < 0.05$ was considered significant.

**Results:** In This study, 75.5% was women. also determined, the most resistancy in inpatients with diabetes was Clindamycin(100%), and the most sensitivity to Meropenem(97.7% ). the most teristance in intpatients without diabetes was clindamycin (97.6%)too, and the most sensitivity belonged to Meropenem, Amikacin (95.2%).

**Conclusion:** In this study different classes of antibiotics considered. As other study was done with other outhers, carbapenems are the best classes of antibiotics. A few strains of bacteria resistance to them. But clindamycin in diabetic and non-diabetic patients show the lowest sensitivity.

**Keywords:** Antibiotic Resistance, Diabetic, Non-Diabetic, UPEC, Gorgan

# P36 - 208: ASSESSMENT OF THE ANTIBIOFILM ACTIVITY OF A SYNTHETIC NORFLOXACIN AGAINST SOME PATHOGENIC BACTERIA

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**Background and Aim:** Bacteria within biofilms possess increased tolerance to antibiotics and are able to resist host defense systems. As bacterial biofilms are often refractory to conventional antimicrobials, the need for alternative and/or novel strategies for the treatment of biofilm related infections has become of paramount importance.

**Methods:** In this study the antimicrobial effect of antibiotics on planktonic form of Bacillus cereus, Psudomonas aueroginosa, and Klebsiella pneumonia were evaluated by disc diffusion method. Then anti-biofilm effects were assessed by microtiter plate method.

**Results:** The highest inhibitory effects of synthetic Norfloxacin were observed on biofilm formation of P.aueroginosa (97.65 %) also, the greatest demolish were observed on P.aueroginosa biofilm (95.18 %). The maximum metabolic activity of bacteria in the biofilm were observed for B.cereus (74.21 %).

**Conclusion:** The results of this study showed good in vitro activity - some even better than the original compound but it needs further investigation.

**Keywords:** Antibiotic resistance, Biofilm, Norfloxacin, Bacteria

# P37 - 209: INVESTIGATIONS OF ANTIMICROBIAL ACTIVITY OF SYNTHETIC CIPROFLOXACIN AGAINST FLUOROQUINOLONE-RESISTANT STAPHYLOCOCCUS AUREUS AND ESCHERICHIA COLI

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**Background and Aim:** The emergence of pathogenic bacterial strains resistant to currently available antimicrobial agents is a universal problem of mounting importance. Antibiotic resistance is accelerated by the misuse and overuse of antibiotics, as well as poor infection prevention and control. One way of overcoming antibiotic resistance is to produce new and diverse antibiotics.

**Methods:** In this study the antimicrobial effect of synthetic Ciprofloxacin on planktonic form of Resistant Staphylococcus aureus and Resistant Escherichia coli were evaluated by disc diffusion method. Then Minimum inhibitory concentration (MIC) and Minimum Bactericidal Concentration (MBC) values were determined by a micro-broth dilution technique.

**Results:** Synthetic Ciprofloxacin had greater inhibitory effect against resistant S. aureus and resistant E. coli in comparison with (respectively zone: 30 mm and zone: 21mm). Synthetic Ciprofloxacin had better MIC values than conventional Ciprofloxacin (0.78 µg/ml) but MBC was constant.

**Conclusion:** The results of this study showed that this synthetic antibiotic represents better antibacterial effects than conventional antibiotics but it needs further investigation.

**Keywords:** Antibiotic resistance, Antimicrobial activity, Ciprofloxacin, Bacteria

# P38 - 214: PATTERN OF ANTIBIOTIC RESISTANCE IN ENTEROCOCCUS SPP. ISOLATED FROM URINARY TRACT INFECTIONS IN TEACHING HOSPITALS OF AHVAZ, IRAN

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**Background and Aim:** Enterococci are Gram-positive, catalase-negative, non-spore-forming, facultative anaerobic bacteria, which usually inhabit the alimentary tract of humans. The most common type of enterococcal infection occurs in the urinary tract. Enterococci are important agent, because of their role as the leading cause of nosocomial infections which have a major role in spreading and persistence of antibiotic resistance genes. This study for detection of varios antibiotic resistance pattern of enterococcus spp. in urinary tract infections.

**Methods:** A total of 109 isolates of enterococci from urine samples were analyzed. Antibiotic resistance properties of strains were carried out using Vancomycin (30 µg), Teicoplanin (30 µg), Nitrofurantoin (200 µg), Linezolid (30 µg), Fosfomycin (200 µg) and Gentamicin disk(10 µg) and the results were interpreted according to Clinical and Laboratory Standards Institute (CLSI) guidelines (Clinical and laboratory standards Institude, 2015) guidelines.

**Results:** Out of 109 isolated of enterococci, 72 (66.1%) isolates were from female and 37 (33.9%) isolates were from male patients. The results of this study showed, Enterococcus isolates resistance to Vancomycin, Teicoplanin, Nitrofurantoin, Linezolid, Fosfomycin, Gentamicin, were found to be 25%, 14%, 11%, 45%, 3% and 75%, respectively(Table1).

**Conclusion:** Today the spread of antibiotic resistance among Enterococcus species has become a new challenge in hospitals. Unfortunately therapeutic failure in Enterococcus infections is increasing, so knowing endemic prevalence of antibiotics resistance pattern in different health centers, updating health methods and limiting colonized patients to control spread of resistance is necessary.

**Keywords:** Antibiotic resistance, Enterococcus, disc diffusion test

# P39 - 218: ANTIMICROBIAL ACTIVITY OF SEED HYDROALCOHLIC EXTRACT OF RUMEX OBTUSIFOLIUS

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**Background and Aim:** The Rumex species belongs to the Polygonaceae family. R. obtusifolius is a perennial plant widely distributed in North America, Europe and Iran. R. obtusifolius are used for the treatment of different diseases.The purpose of this study was to investigate of antimicrobial activities of hydroalcohlic extract from seed of R. obtusifolius.

**Methods:** The R. obtusifolius seeds were extracted using Ethyl acetate: methanol: distilled water (6:3:1) by Soxhelet system. The hydroalcoholic extraction of R. obtusifolius was evaluated for their antioxidant capacities using in vitro methods, including 1-diphenyl-2-picrylhydrazyl radical scavenging, β-Carotene bleaching test and reducing power assay. Total free phenolics and total flavonoids content as well as antimicrobial activity were also examined.

**Results:** This study revealed a highest antioxidant capacity in the seeds of Rumex obtusifolius as compared to the control groups. The minimum inhibitory concentration values at 24 and 48 hours were 200µg/µL for Escherichia coli and 300µg/µL for Staphylococcus aureus.

**Conclusion:** The seeds hydroalcohlic extract of R. obtusifolius showed antibacterial activity and it could be used as natural antibacterial in food.

**Keywords:** Rumex obtusifolius, Antimicrobial activity, Hydro alcoholic extract, Seed

# P40 - 219: PREVALENCE OF METALOBETA-LACTAMASE PRODUCING PSEUDOMONAS AERUGINOSA STRAINS ISOLATED IN IRAN

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**Background and Aim:** Pseudomonas aeruginosa is an ubiquitous organism which has emerged as a major public health that threats in hospital environments. Overuse of antibiotics has significantly exacerbated the emergence of multi-drug resistant bacteria such as P. aeruginosa. Metalobate-lactamase producing strains play main role in this kind of antibiotic resistant infection. Therefore, this study designed to evaluate the MBL resistance among isolates of Pseudomonas aeruginosa in Iran.

**Methods:** By using search the keywords in information Databases 44 papers were selected between 2007-2014 years, according to approaches to enrolled in study. All papers after qualitative control by using random effect model enrolled to Meta-analysis. Heterogeneity between studied was assessed by I-Square index, and then data were analyzed by using STATA Ver. 10,R software.

**Results:** 6771 samples surveyed and prevalence rate is 25% (CI:95%:21-29). Most prevalence belonged to 88% in center (CI:95%:81-94) and lowest prevalence was 1% (CI:95%:1-3) for Southeast of Iran. Among the genes of MBL, VIM gene with the prevalence of 64%(CI:95%:48-79)is the highest frequency of certain genes and IMP,SPM و SIM genes to the next in quartiles. Most antibiotic resistance prevalence belonged to Cefepim by 81% (CI:95%:74-87) and lowest prevalence was 49% (CI:95%:38-60) for Imipenem.

**Conclusion:** Recent studies show that the MBL-producing P. aeruginosa strains in the country is rising. These results could be associated to unreasonable prescription or self usage of antibiotic by patients. Thereby, appropriate prescription by physician is recommend and also monitoring prevalence of antibiotic resistance by meta-analysis routinely is useful for other scientist.

**Keywords:** Pseudomonas aeruginosa,metaloBetalactamase, Meta-analysis, Iran

# P41 - 224: CARTWHEEL METHOD PHENOTYPIC SCREENING IN PRESENCE OF EFFLUX PUMP IN THE PSEUDOMONAS AERUGINOSA ISOLATED FROM SKIN INFECTIONS

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**Background and Aim:** Systems efflux as one of the most important mechanisms of innate resistance and acquired pseudomonas aeruginosa accounts, and the ability to excrete toxic substances such as antibiotics and drugs out of the cell, which has the job of creating the right concentration of toxic substances to inhibit bacteria to prevent they do. The aim of this study was to investigate the presence of efflux pump of Pseudomonas aeruginosa strains isolated from samples of skin.

**Methods:** After collecting 200 samples of skin, cultures and primary isolation and identification of Pseudomonas colonies, strains resistant to ciprofloxacin were identified using disk diffusion method. Finally strains resistant to ciprofloxacin for the presence of efflux pumps were identified using cartwheel method.

**Results:**After the study, 87 samples were isolated pseudomonas, 19 of them were resistant to ciprofloxacin, of which only 13 have been efflux pump.

**Conclusion:** P. aeruginosa containing efflux pump ethidium bromide that pumps out bacteria and prevents penetration of bacteria into the ethidium bromide fluorescence is therefore not uv light.

**Keywords:** Pseudomonas aeruginosa, efflux pumps, ciprofloxacin, Cartwheel method

# P42 - 227: EVALUATION ANTIMICROBIAL EFFECTS OF ALOE VERA EXTRACT ON ESCHERICHIA COLI BACTERIA WITH AGAR WELL DIFFUSION

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**Background and Aim:** Increasing spread of drug- resistance among bacteria lead us to have much attention on finding prevention way of resistance outbreak and finding suitable drugs with law and side effects. Aloe vera belong to liliaceae family (herbal plants) and is multi-year and has important effects in remedy. For this has much attention in herbal medicine. In this research we Evaluation antimicrobial effects of Watery extract Aloe vera on Escherichia coli bacteria.

**Methods:** Perfect extract of leaf of Aloe vera done with soksele way , after taking extract with 500 density mg/ml for determining antimicrobial effect on E.coli ATCC 25922 we wed of agar well diffusion and minimum inhibitor concentration (MIC,MBC) and minimum bactericidal concentration determined with using of tube dilution.

**Results:** Results with tree repeat show that Watery extract Aloe vera has anti-microbial effect on E.coli bacteria with maximum halo diameter 14/26 mm and has mic point with 500mg/ml density.

**Conclusion:** Watery extract of leaf and gel has fewer antimicrobial effect on E.coli bacteria.

**Keywords:** Aloe Vera, Watery extract, Escherichia Coli

# P43 - 234: HEALTHY BROILER AS A POTENTIAL THREAT FOR TRANSMISSION OF EXTENDED-SPECTRUM BETA-LACTAMASE GENES TO HUMAN POPULATION IN WEST OF IRAN

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**Background and Aim:** Intestinal carriage of extended-spectrum beta-lactamase producing bacteria in food-producing animals and contamination of retail meat may contribute to increased incidences of infections with ESBL-producing bacteria in humans. The aim of this study was to investigate the presence of three classes of ESBL genes in Escherichia coli isolates from broiler in Sanandaj region, Iran.

**Methods:** A total of 300 broiler caecal samples were collected aseptically. E .coli was isolates using culture and biochemical reactions. The isolates were confirmed in a species-specific PCR reaction and the positive samples were analyzed using PCR-based replicon typing for blaCTX-M, blaTEM, and blaSHV genes.

**Results:** 285 E. coli strains were identified phenotypically and molecularly. In general, 156 isolates (54.73%) harbored at least one ESBL encoding-gene. The frequency of blaTEM was 96.15% (150 isolates) as the predominant gene, followed by blaCTX-M in 70.51% (110 isolates) and blaSHV in 55.12% (86 isolates). Moreover, coexistence of ESBL genes were detected in 150 isolates (96.15%) while 6 isolates (3.84%) carried only one ESBL gene cluster.

**Conclusion:** This study demonstrated that healthy broiler feces may be a reservoir of ESBL-producing E. coli in Sanandaj city. Since, a potential swift route for transmission of bacteria from broiler to human can be through contaminated products, the abundant presence of ESBL genes may have a profound effect on future treatment options in humans for a wide range of infections caused by not only E. coli, but also other gram-negative bacteria.

**Keywords:** broiler, normal flora, ESBL, Escherichia coli, molecular detection

# P44 - 239: ANTIMICROBIAL ACTIVITY OF NATURAL PRODUCTS FROM MEDICINAL PLANTS

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**Background and Aim:** In the recent years, research on medicinal plants has attracted a lot of attentions globally.

**Methods:** Large body of evidence has accumulated to demonstrate the promising potential of medicinal plants used in various traditional, complementary and alternate systems of treatment of human diseases. Plants are rich in a wide variety of secondary metabolites such as tannins terpenoids, alkaloids, flavonoids, etc., which have been found in vitro to have antimicrobial properties. Clinical microbiologists have two reasons to be interested in the topic of antimicrobial plant extracts. First it is very likely that these phytochemicals will find their way into the arsenal of antimicrobial drugs prescribed by the physicians; several are already being tested in humans.

**Results:** Scientists realize that the effective life span of any antibiotic is limited, so new sources especially plant sources are also being investigated. Second the public is becoming increasingly aware of the problems with the over prescription and misuse of traditional antibiotics. In addition many people are interested in having more autonomy over their medical care. A multitude of plants compounds (often of unreliable purity) is readily available over the counter from herbal suppliers and national food stores and the self-medication with these substances is a common practice to certain extent.

**Conclusion:** Section A highlights the various Medicinal plants which have shown antibacterial, antifungal, antiviral and anti protozoal properties whereas in section B the main focus is on the different groups of phytochemicals exhibiting medicinal properties.

**Keywords:** Antimicrobial activity, natural products

# P45 - 246: BIOFILM FORMATION OF P. AERUGINOSA CLINICAL ISOLATES AND RELATIONSHIP WHIT ANTIBIOTIC RESISTANCE PATERN.

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**Background and Aim:** Pseudomonas aeruginosa has been mentioned as the major causative agents of nosocomial infections. Pseudomonas infections are often serious and due to distribution of antimicrobial resistance, some infections show hard to treat. Meanwhile, some strains are able to form biofilm during contamination which help bacteria to show even more resistance against antimicrobial agents.

**Methods:** The antibiotic resistance of P. aeruginosa clinical isolates against Gentamicin, Clarithromycin, Cephalosporin, Ciprofloxacin, Imipenem, Azithromycin, and Ceftazidime and also biofilm forming capability within isolates.

**Results:** Seventy-Two P. aeruginosa were isolated from clinical specimens, by culturing on bacteriology standard media. They were confirmed by standard bacteriology tests. The antibiotic resistance pattern of isolates against antibiotics was then obtained using standard method of Kirby–Bauer antibiotic testing. Finally, biofilm forming of isolates were examined according to Microtiter Dish Biofilm Formation Assay standard method.

**Conclusion:** The resistance against tested antibiotics were observed by most of clinical isolates. 54% of isolates showed resistance against Azithromycin and Clarithromycin, while, only 21% showed anti- Ciprofloxacin. 10%of isolates were able to form biofilm (OD= 1.2), the biofilm forming isolates showed resistance at least against one antibiotic.

**Keywords:** P. aeruginosa, Biofilm forming, antibiotic resistance

# P46 - 248: IMIPENEM-RESISTANT PSEUDOMONAS AERUGINOSA IN IRAN; A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Imipenem-resistant Pseudomonas aeruginosa (IRPA), due to resistance to different classes of antibiotics and its remarkable capacity to survive in harsh and adverse condition such as hospital environment, is consider as a serious threat to health care setting system. Given the great impact of IRPA on patient's outcome and in order to possible improvement of antibiotic prescription, this study was conducted to determine the prevalence of clinical isolates of IRPA in different parts of Iran

**Methods:** Systematic literature search was performed in PubMed, ISI (Web of Science), google scholar and Scopus, as well as two Iranian domestic search engines including Iranian Scientific Information Database and Magiran. Finally, after applying exclusion and inclusion criteria 37 articles with full-text describing the prevalence of imipenem-resistant P. aeruginosa were selected for meta-analysis and systematic review.

**Results:** The pooled estimation of 5227 P. aeruginosa isolates in our analysis showed that the percentage of imipenem-resistant P. aeruginosa is about 54% in Iranian population (95% CI: 0.47-0.62, Logit event rate=0.19, 95%CI: -0.12,0.49).The highest and lowest prevalence was seen in Isfahan province and Hamadan province, with 65% and 8%, respectively.

**Conclusion:** The findings of this analysis underscore in the majority of Iranian hospitals the relative frequency of IRPA is in high level, therefore, in order to prevent further dissemination of IRPA, more appropriate prescribing of antibiotics and infection control policies must be taken by decision-makers

**Keywords:** Imipenem-resistant Pseudomonas aeruginosa, carbapenem resistance, Pseudomonas aeruginosa,

# P47 - 249: THE BIOINFORMATICS' STUDY OF MUTATION EFFECT ON EFFLUX PUMP REGULATORY PROTEIN (MEXR) IN PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Pseudomonas aeruginosa (P. aeruginosa) is one of the most important non-fermentative hospital-acquired gram-negative bacilli. Treatment of P. aeruginosa infection due to overexpressed efflux pumps is becoming more difficult. The aim of present study was, by using insilico analysis, to evaluate the structure and the mutation impact on different aspects of efflux pump regulatory protein MexR, including stability, and function.

**Methods:** Different Bioinformatics' tools including EXPASY, PROTEER, TECCOFFE, iStable, I Mutant 2, STRING, ESPRIT, GOR IV, and PDB were applied to evaluate structure of MexR and also mutation effect on its stability and function.

**Results:** The aliphatic index and instability index are computed to be 104.15, and 46.52, respectively, showing relatively short half-life protein. The majority of investigated mutations made protein unstable. Twenty-four mutations were identified as deleterious, with negative impact on protein's function.

**Conclusion:** Determination of structure, variability, and function of MexR has undeniable role for modeling of related treatment to control multidrug resistance P. aeruginosa, with overexpressed efflux pump. MexR is relatively unstable and conserved protein. The majority of mutations decreased protein stability.

**Keywords:** Pseudomonas aeruginosa, MexR, Efflux pump, Bioinformatics

# P48 - 250: A RANDOMIZED CONTROLLED TRIAL OF TEA TREE OIL BODY WASH VERSUS CHLORHEXIDINE BODY WASH TO PREVENT COLONIZATION WITH METHICILLIN-RESISTANT STAPHYLOCCOCUS AUREUS IN PEDIATRIC UNIT OF LOGHMAN-E-HAKIM HOSPITAL

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**Background and Aim:** Over the past ten years MRSA has become endemic in hospital and associated with therapies, washing with 5% tea tree oil (TTO) has been shown to be effective in removing MRSA on the skin. However, to date, no trial have evaluated potential of TTO body wash to prevent MRSA colonization or infection.we used usual culture method to detect MRSA.

**Methods:** This study protocol describes the design of an one-center, phase 1 prospective open-label controlled clinical trial to evaluate whether a concentration of 5% TTO is effective in preventing MRSA colonization in comparison with a chlorhexidine 2% body wash in the pediatric unit of Loghman-e-Hakim hospital, swab from the site of catheter will be taken to screen for MRSA as per current particle. patient will be randomly assigned to be washed with TTO or chlorhexidine. on expiration of the catheter swab will be taken again to identify whether there is a difference in MRSA colonization between two group.

**Results:** There is no difference in MRSA colonization in both group.

**Conclusion:** If tea tree oil wash is found to be effective, widespread implementation of such a simple colonization prevention tool has potential to impact on patient outcome, healthcare resource use and patient confidence both nationally and internationally.

**Keywords:** MRSA, child, tea tree oil

# P49 - 251: AMINOGLYCOSIDE RESISTANCE IN CLINICAL AND ENVIRONMENTAL ISOLATES OF PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Many clinical isolates of Pseudomonas aeruginosa exhibit antibiotic-resistance and it is the main cause of hospital infections. The aim of this study was to evaluate the diversity of genes coding for antibiotic resistance in clinical and environmental isolates in Tehran, Iran

**Methods:** In this cross-sectional study, 100 clinical isolates and 50 environmental isolates of Pseudomonas aeruginosa were collected from October 2014 to May 2015. The standard disk diffusion method (SDD) was performed to test for antibiotic susceptibility. All isolates were evaluated by PCR for the presence of genes encoding resistance to aminoglycoside antibiotics. The relationship between antibiotic resistance and genes encoding resistance to aminoglycoside was tested by the 2-tailed Chi-Square test ($\chi 2$) or Fisher's exact test. P values of $\leq 0.05$ were considered statistically significant.

**Results:** The most common antibiotic resistance was to cotrimoxazole (61%). The least observed resistance was to meropenem (9%) and Co-trimoxazole (12%). The aminoglycoside-resistance cassette included aadA (confers resistance to streptomycin and spectinomycin) and apha1 (encoded aminoglycoside 3'-phosphotransferase) genes were the most prevalent in the isolates.

**Conclusion:** Antibiotic resistance had a high prevalence in clinical isolates of Pseudomonas aeruginosa. Knowledge of their patterns of drug resistance will be helpful in applying effective antibiotic treatments and appropriate infection control measures to prevent the spread of infection in hospitals.

**Keywords:** Antibiotic resistance, Pseudomonas aeruginosa, Aminoglycoside Resistance

# P50 - 254: STUDY OF ANTI-BACTERIAL EFFECTS OF SEVEN CARBOTHIOHYDRAZIDE DERIVATIVES

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**Background and Aim:** Due to the increasing microbial resistance and the prevalence of infectious diseases, An essential need to discover new compounds with a broad antimicrobial efficacy is granted. In order to fulfill this demand, thiosemicarbazone derivatives have been considered because of their simple chemical structure and diverse biological activities. In this study anti-microbial effects of seven carbothiohydrazide derivatives against six strains including Staphylococcus aureus, Enterococcus feacalis, Micrococcus luteus, Pseudomonas aeruginosa, Salmonella typhi, and Escherichia coli have been assessed and MIC were determined using agar dilution method compared to the standard ciprofloxacin antibiotic.

**Methods:** In this research, at first, progressive double dilution of test substances were mixed with melted medium, afterwards inoculum of a specified amount of microbial suspentions was added. Then, MIC was measured based on the last plate concentration which was resulted from invisible growth of bacteria on the plate. The positive control plate should complete the growth while the negative control does not show any growth.

**Results:** The obtained MIC for all bacterial species was measured equal or more than 64 µg/mL depicting no promising antibacterial effectiveness of carbothiohydrazine compounds.

**Conclusion:** According to the measured MIC of the tested compounds compared with standard antibiotic, none of the compounds showed considerable activity in comparison with the reference drug, ciprofloxacin.

**Keywords:** Antimicrobial, MIC, Carbothiohydrazide

# P51 - 259: STUDY OF THE FACTORS AFFECTING ON THE ANTIBIOTIC RESISTANCE FROM THE PERSPECTIVE OF PHARMACISTS WORKING IN PHARMACIES IN THE ISFAHAN CITY

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**Background and Aim:** Antibiotic resistance is one of the most important hygienic problems of today's society. The aim of this study is to investigate the effective factors on the antibiotic resistance from the pharmacists' viewpoint that is working in drugstores of Isfahan city.

**Methods:** The method of this study is by a questionnaire that contains 26 questions with the Cronbach's alpha of 79% that were answered by 96 pharmacists.

**Results:** The age of pharmacists that answered the questionnaire was 41.39±10.68 in a way that 63% were males and 37% were females, and mostly their work experience was above the 16 to 20 years (76%). The factors that were related to antibiotics' supply centers (drugstores) was selling the antibiotics without prescription with the frequency of 83%, in the diagnosis and prescribing centers (doctor and hospitals), the element of unnecessary antibiotics' prescribing 78.3%, from the elements related to the creation of antibiotic resistance in relation to the food production units, unnecessary antibiotics' prescribing in breeding farms (livestock, poultry) with the frequency of 78.3% and among the factors related to the patients and people, the over use and without prescribing consumption of antibiotics with 93.5% are considered the most effective elements in creation of antibiotics resistance.

**Conclusion:** Regarding the mentioned results, the decisions including forbidding the sale of antibiotics without prescription, culture building and training the doctors, pharmacists and veterinarians about prescribing antibiotics logically and forcing them to write their diagnosis and reason of prescribing antibiotics within their prescriptions.

**Keywords:** Antibiotic resistance, Pharmacists, Pharmacies, Veterinarians

# P52 - 265: MENTHA PULEGIUM ESSENTIAL OIL EFFECTS ON BIOFILM OF BACTERIA ISOLATED FROM PRESSURE ULCERS

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**Background and Aim:** Biofilms are bacterial complex aggregations that attach to mucosal surfaces. Bacterial Planktonic and biofilm phenotypes play an important role in acute and chronic wounds infections such as bedsore ulcers. But biofilm phenotype due to increasing drug resistance and inefficient of common treatments against them have major role in prevention of wounds treatment. So the need for discovery of new antimicrobial is necessary. The use of plants with healing properties is one of the most way. The aim of study was to evaluate of anti-microbial and anti-biofilm effect s of Mentha Pulegium against bacteria isolated from pressure ulcers.

**Methods:** This study was conducted on 14 Staphylococcus aureus and 13 pseudomonas aeruginosa strains isolated from bedsores of hospitalized patients.Isolates identified by biochemical tests. The biofilm formation was assessed by MTP method. The Minimum inhibitory concentrations of tetracycline and ciprofloxacin were determined. The antimicrobial effect of essential oil of Mentha Pulegium was studied on biofilm positive bacteria .The percentage of biofilm inhibition was determined.

**Results:** 58% of S. aureus and 85% of P. aeruginosa isolates base on biofilm formation were positive. The MIC of antibiotics showed that 93% of Staphylococcus aureus were resistant to Tetracycline and 76% of P. aeruginosa were resistant to ciprofloxacin.The MIC of Mentha Pulegium essential oil against S. aureus and P. aeruginosa were 0.12-16 µg/ml and 0.12-256 µg/ml. The percentage of biofilm inhibition was 0-22% and 7-11% .

**Conclusion:** The essential oil of Mentha Pulegium have antimicrobial effects on bacteria isolated from pressure ulcers but it's anti biofilm effects was low.

**Keywords:** Mentha Pulegium, Anti biofilm, pressure ulcers

# P53 - 266: EVALUATION OF ANTIBIOTIC RESISTANCE IN ENTEROBACTER AEROGENES STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN THE SUMMER AND FALL OF 1395 IN IMAM REZA HOSPITAL, BOJNORD, NORTH KHORASAN

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**Background and Aim:** Enterobacters are Environmental microorganisms living in soil and water which in recent decades are known as one of the causes of urinary tract infections, septicemia and nosocomial infections. These bacteria are often resistant to beta-lactams, chloramphenicol, tetracycline and streptomycin, and are sensitive to kanamycin and gentamycin. The aim of this study was to determine antibiotic resistance in Enterobacter aerogenes strains isolated from cultures in patients of Imam Reza Hospital, Bojnoord at summer and fall of 1395.

**Methods:** After isolation of E.aerogenes from Urine samples with conventional approaches antibiotic resistance were investigate by disk diffusion method in accordance with CLSI guidelines using amikacin, ampicillin, cefixime, ceftizoxime, gentamicin, trimethoprim-sulfamethoxazole, ceftazidime, ciprofloxacin, ceftriaxone and nitrofurantoin disks.

**Results:** In the summer and fall of 1395 a total of 2763 urine culture 307 (11/1%) were positive. Among these 6 cases (1/95%), E. aerogenes was isolated. The resistance were 83/3% to ampicillin, 66/6% to ceftriaxone, 83/3% to ceftizoxime, 66/6% to cefixime, 50% to ceftazidime, 50% to gentamicin, 66/6% to amikacin , 83/3% to cotrimoxazole, 16/6% to ciprofloxacin and ultimately 33/3% to nitrofurantoin.

**Conclusion:** As can be seen in enterobacteria resistance to most common antibiotics has increased compared to before. More studies are needed on the causes of nosocomial infections, particularly strains resistant to antibiotics and the development of preventive measures to prevent the spread of nosocomial infections felt.

**Keywords:** Enterobacter aerogenes, antimicrobial resistance, urinary tract infection

# P54 - 269: EVALUATION OF ANTIBIOTIC RESISTANCE IN ESCHERICHIA COLI STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN IMAM REZA HOSPITAL, BOJNURD, IN SUMMER AND AUTUMN 1395

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**Background and Aim:** Escherichia coli is a member of the Enterobacteriaceae family, which is part of the normal flora of the gastrointestinal tract of humans. This bacterium is a most common cause of urinary tract infections. Given the importance of urinary tract infection and may spread to the bloodstream and other parts of the body correct and efficient treatment is very important. The aim of this study was to determine antibiotic resistance in Escherichia coli strains isolated from urinary tract infections Imam Reza Hospital, Bojnurd, in summer and autumn 1395.

**Methods:** After isolation and confirmation of strains of E. coli in Urine samples with conventional approaches, investigation of antibiotic resistance performed by disk diffusion method in accordance with CLSI standards using amikacin, ciprofloxacin, imipenem, ampicillin, Avflvksazyn, trimethoprim-sulfamethoxazole, gentamicin, nitrofurantoin, ceftriaxone, cefotaxime, Nalidixic acid, cefazolin and amoxicillin disks.

**Results:** In the summer and fall of 1395 a total of 2763 urine culture 307 (11/1%) were positive. Among these 226 cases (73/61%) was isolated E. coli. The strains 60/17% to amikacin, 23% to ciprofloxacin, 0% to imipenem, 37/6% to ampicillin, 79/64% to ofloxacin, 35/4% to co-trimoxazole, 19/9% to gentamicin , 22/1% to nitrofurantoin, 6/63% to Nalidixic acid, 77/9% to cefazolin and 88/5% were resistant to amoxicillin.

**Conclusion:** According to results, relatively high rates of antibiotic resistance are seen compared to previous reports. Given the importance of E. coli in urinary tract infections, need to revise and correct diagnosis and appropriate treatment in order to reduce the spread of antibiotic resistance of urinary tract infections can be felt.

**Keywords:** Eschrichia coli, antimicrobial resistance, urinary tract infection

# P55 - 270: ANTIMICROBIAL AND SYNERGISTIC EFFECT OF CELL FREE SUPERNATANT OF THE ISOLATED PENICILLIUM WITH PENICILLIN AGAINST ESCHERICHIA COLI

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**Background and Aim:** Penicillium fungus is one of the most important producers of the antibiotics. Due to the problem of the antibiotic resistance and nosocomial infections, screening for new strains of antibiotic producing with high-efficiency has become more important.

**Methods:** In this study, in order to isolate indigenous Penicilliumwith antibacterial properties, the moldy fruits were used. Samples were cultured in Potato Dextrose Agar medium for one week at 30 ° C. Microscopic properties of the isolates were studied with Lactophenol cotton blue staining.To evaluate the antibacterial properties of the isolates against Escherichia coli and Staphylococcus aureus, dual culture overlay assay was done.To investigate the possibility of producing antibiotics, the isolates were inoculated into the lactose broth medium for 1 week at room temperature and 150rpm.To evaluate the antibacterial activity of the cell-free supernatants (CFS) of the isolates, the agar disk diffusion test were used.The synergistic effect of the penicillin and the CFS was determined.

**Results:** The results showed that the fungal isolates belonging to the Penicillium family that had strong antimicrobial activity. E. coli susceptibility to CFS was determined 80% of the susceptibility of the E. coli to the penicillin antibiotic.CFS had asynergistic effect with penicillin antibiotics and growth of E. coli in the presence of both CFS and penicillin than penicillin alone was reduced by 35%.

**Conclusion:** This fungal isolates have good antibacterial activity and can be used in industry for the production of antibiotics.CFS combination with penicillin may also be considered as an alternative therapy.

**Keywords:** Penicillium, Synergistic Effect, Cell Free Supernatant, Escherichia coli

# P56 - 273: DIFFERENTIATION OF METICILLIN-RESISTANT STAFYLOCOCCUS AUREUS (MRSA) FROM COAGULASE- NEGATIVE STAPHYLOCOCI (CONS) AND METICILLIN- SENSITIVE STAFYLOCOCCUS AUREUS (MSSA) BY MULTIPLEX-PCR METHOD

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**Background and Aim:** Methicillin-resistant Staphylococcus aureus (MRSA) and methicillin-resistant coagulase negative Staphylococci (MRCNS) are frequent causes of nosocomial infections in recent years. MRSA, particularly the multidrug- resistant clones, are an increasing problem worldwide.The aim of present study was to determine the rate of MRSA and MRCNS in our setting by using multiplex PCR targeting three genes of mecA, nuc, 16S rRNA sequence used for staphylococcal DNA.

**Methods:** In total 1133 isolates of Staphylococcus were collected from major 4 University teaching hospitals, Ahvaz, Iran, from June 2012 to December 2014. The isolates were identified as S. aureus by using standard culture and biochemical tests. DNA was extracted from bacterial colonies and multiplex PCR was used to detect MRSA and MRCoNS strains.

**Results:** 595 (52.51%) out of total isolates were identified as S. aureus by application of conventional identification tests. Multiplex PCR revealed 333 (56 %) of S. aureus confirmed isolates as MRSA, and the method demonstrated sensitivity and specificity equal to 100%. Prevalance of MRSA was variable in 4 University teaching hospitals, Ahvaz from lowest 34.78% to high percent 88.2%.The highest resistance was seen against amikacin, azithromycin, ciprofloxacin, and ofloxacin.

**Conclusion:** The Multiplex PCR developed in present study, is a simple and rapid assay for the detection of MRSA and MRCNS. This study revealed a high MRSA rate in the region under investigation and emphasizes the need for preventive measures and choosing effective antimicrobial agents for the control of MRSA and MRCoNS infections

**Keywords:** Methicilli-resistant S. aureus; Multiplex PCR,Coagulase negative Staphylococci

# P57 - 276: STUDY OF ANTIBACTERIAL ACTIVITY OF FOUR DERMAL ENHANCERS AGAINST SIX BACTERIAL STRAINS

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**Background and Aim:** Bacterial resistance and its rapid increase is a major concern of global public health and is emerging as one of the most significant challenges to life. So, one approach is to find new antimicrobial agents which is a time and cost consuming approach. In the present study the antimicrobial effect of four widely used penetration enhancers including urea, chitosan, and two essential oils citral and eugenol were evaluated by determination of Minimum Inhibitory Concentrations (MIC) value.

**Methods:** The antibacterial effect of urea, chitosan, citral and eugenol were evaluated by determination of the MIC value against 3 Gram positive and 3 Gram negative microorganisms: Staphylococcus aureus ATCC6538, MRSA ATCC33591, Bacillus cereus PTCC1247, Escherichia Coli ATCC8739, Salmonellla typhimurium ATCC14028, Pseudomonas aeruginosa ATCC9027. MIC values were determined by broth micro-dilution method according to CLSI recommended method. Vancomycin and gentamicin were used as negative control.

**Results:** The results demonstrated that all four substances had inhibitory effect against all six bacterial strains. Analysis of antimicrobial effects demonstrated that Chitosan and Citral have higher inhibitory effect on Gram positive microorganisms in comparison to Urea and Eugenol.Mic value for chitosan against S. aureus is 0.469 mg/ml, and 0.9370 mg/ml against MRSA ,and 1.875 mg/ml against B. cereus. Also, Mic value for citral against S. aureus is 3.125 µl/ml, and 6.25 µl/ml against MRSA ,and 6.25 µl/ml against B. cereus.

**Conclusion:** Chitosan and citral have the potential to be used in transdermal products to prevent infection or enhance the effect of the antibiotics in dermal infections

**Keywords:** Microbial resistance, enhancer, anti microbial effect, MIC

# P58 - 287: QUORUM SENSING IN BACTERIA: A REVIEW OF ADVANCES OVER THE LAST HALF CENTURY

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**Background and Aim:** Bacteria live on Earth billions of years ago and the first alive creature on the earth was a bacterium. Bacteria are single-celled microscopic organisms that have the ability to perform different works. They are able to do harmful works such as pathogenicity that makes us sick and useful works such as bacterial flora that exists on or in the body and help us to stay healthy. But the important point is that harmful or useful bacteria, need communicate with one another, to act as a unit. This chemical communication called quorum sensing (QS).

**Methods:** A thorough search of international electronic databases was carried out to detect relevant papers of QS, including empirical, descriptive, and discursive papers that were published over the last half century.

**Results:** At first it was thought that only eukaryotes and multicellular organisms capable of coordinating cells to perform a specific function, but in the early 1970, the first studies to examine the communication between bacterial cells began and in 1994, it was detected and termed quorum sensing. After that and from 1996 onwards, the majority of studies focused on monitoring this process and in recent years researchers are looking for ways to inhibition of QS in pathogenic bacteria.

**Conclusion:** Inhibition of QS with the goal of production next generation of antibiotics is a novel method that may open a new way for controlling bacterial infections in multidrug-resistant bacteria. We can also trying to reinforce or more effective of QS in beneficial bacteria, such as bacterial flora and industrial bacteria.

**Keywords:** Quorum sensing, multidrug-resistant bacteria, antibiotic, industrial bacteria

# P59 - 289: RESISTANCE IN MYCOBACTERIUM TUBERCULOSIS CLINICAL ISOLATES RESISTANT TO ANTI-TB DRUGS

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**Background and Aim:** Streptomycin is an antibiotic aminoglycoside Vbaktrysydal. In this study, the role of rrs mutations in streptomycin antibiotic resistance in clinical strains of MTB were evaluated molecule.

**Methods:** In this study of 54 clinical isolates of Mycobacterium tuberculosis culture positive, 18 strains included 15 isolates were resistant and three susceptible strains. Strains for the occurrence of these mutations were also examined rpsl. Specific primers used rrsF, rrsR, rpsLR rpslF were. PCR products were sent for sequencing to Source Bioscience Corporation.

**Results:** Bands and prove the correctness of the primers.It was proven that early detection of genetic resistance to streptomycin resistance gene rrs can make an important contribution to the diagnosis.

**Conclusion:** The results of this study should be mainly based rapid detection of streptomycin resistance mutations rpsl Brtshkhys is the use of very low sensitivity rrs gene is involved in the relationship Vbyshtrvq

**Keywords:** Mycobacterium tuberculosis, drug resistance,streptomycin,sequencing

# P60 - 292: EVALUATION OF ANTIMICROBIAL ACTIVITY OF ALCOHOLIC AND AQUEOUS EXTRACTS FROM COMMON HOP (HUMULUS LUPULUS) AND OAK (QUERCUS CASTANEIFOLIA)

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**Background and Aim:** Due to increasing antibiotic resistance, it is important to identify the antimicrobial activity of herbs. This experimental study aimed to evaluate the antimicrobial activity of herbal extracts of common hop (Humulus lupulus) and oak (Quercus castaneifolia) against several microbial standard strains.

**Methods:** The alcoholic and aqueous extracts of H. lupulus and Q. castaneifolia were extracted. The inhibitory effects of herbal extracts were evaluated against the microbial standard strains (Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, and Candida albicans) by both agar diffusion and macrobroth dilution methods. In the agar diffusion method, concentrations of extracts were 125, 250, 500 and 1000 mg/ml. In order to determine the MIC, serial dilutions were prepared with a range from 1 to 512 mg/ml.

**Results:** Alcoholic extract of both hop and oak showed higher inhibitory effect against microbial standard strains, compared to the aqueous extract. S. aureus ATCC 29213 and C.albicans ATCC 76615 showed higher susceptibility to both alcoholic and aqueous extracts compared to E. coli ATCC 25922 and P.aeruginosa ATCC 27853. Statistically significant difference was found on the MIC of alcoholic and aqueous extracts ($p< 0.05$).

**Conclusion:** This study revealed the considerable inhibitory effects of herbal hop and oak extracts on the various microorganisms, including bacteria and fungi. Although more research is needed in this field, they can be used as new antimicrobials in medicine.

**Keywords:** Alcoholic extract, Antimicrobial activity, Aqueous extract, Humulus lupulus,Quercus castaneifolia

# P61 - 293: FREQUENCY OF ANTISEPTIC RESISTANCE AMONG STAPHYLOCOCCUS AUREUS AND COAGULASE-NEGATIVE STAPHYLOCOCCI ISOLATED FROM A UNIVERSITY HOSPITAL IN CENTRAL IRAN

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**Background and Aim:** Reduced biocide susceptibility in Staphylococci is associated with various antiseptic resistance genes encoding efflux systems. Our aim was to determine the susceptibility to three disinfectant agents, including benzalkonium chloride (BABAC), benzethonium chloride (BZT), and chlorhexidine digluconate (CHDG) among clinical isolates of Staphylococcus aureus and coagulase-negative Staphylococci (CoNS).

**Methods:** The minimum inhibitory concentration (MIC) of 60 methicillin-resistant S. aureus (MRMRSA), 54 methicillin-sensitive S. aureus (MSSA) and 51 CoNS isolates from a single hospital to three biocidal agents (BABAC, BZT, and CHDG) was determined. Biocide resistance genes (qacA/B, smr, qacG, qacH, qacJ, and norA) were analyzed by the polymerase chain reaction assay

**Results:** All isolates had MICs for BABAC and BZT from 0.25 to 8 µg/mL, and for CHDG from 0.5 to 64 µg/mL. qacA/B was the most common biocide resistance gene among all 165 Staphylococcus isolates (76; 46%), which comprised 38 (63.3%) MRMRSA, 14 (25.9%) MSSA, and 24 (47%) CoNS. Eleven (6.7%) and 24 (14.5%) isolates among the 165 Staphylococci carried smr and norA genes, respectively. In contrast, other resistance genes such as qacG, qacH, and qacJ were absent in all Staphylococci studied. The qacA/B and smr genes were detected concomitantly in 3% of isolates, and 23.6% strains of the total 165 Staphylococcus isolates were negative for each studied gene

**Conclusion:** The carriage of several biocide resistance genes, including qacA/B, smr, and norA, alone or concurrently, is associated with reduced susceptibility. Use of antiseptics may select for antibiotic-resistant strains and assist their survival in the healthcare environment.

**Keywords:** Antiseptics; Methicillin- resistant Staphylococcus aureus

# P62 - 298: THE IMPACT OF MUTATIONS IN TOPOISOMERASE GENES AND THE PLASMID-MEDIATED QUINOLONE RESISTANCE (PMQR) DETERMINANTS ON THE RESISTANCE TO FLUOROQUINOLONES IN KLEBSIELLA PNEUMONIAE

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**Background and Aim:** Klebsiella pneumoniae causes a variety of infections, including community acquired pneumonia and nosocomial infections. The aim of this study was to determine the plasmid-associated quinolone-resistance (PMQR) genes and mutations in quinolone-resistance determining region (QRDR) of topoisomerase genes in K. pneumoniae.

**Methods:** One hundred K. pneumoniae isolates were collected from Kermanshah hospitals. The minimum inhibitory concentrations (MIC) for levofloxacin and ciprofloxacin was determined by broth microdilution method. The presence of PMQR genes (qnrA, qnrB, qnrS, aac (6′)-Ib, and qepA¬) among isolates resistant to fluoroquinolones was detected by PCR¬. All PCR products for topoisomerase genes (gyrA, gyrB and parC) were sequenced and analyzed

**Results:** Sequence analysis showed mutations in gyrA at codons 83 and 87 in 24 (85.7%) and 20 (71.4%) of isolates, respectively. For parC mutations were detected at codons 80 and 84 in 15 (53.6%) and 7(25%) isolates, respectively. At the outside of QRDR in gyrA and gyrB, mutations were also observed. The mutation was not detected in the QRDR of gyrB. The qnrB, qnrS and aac (6')-Ib-cr were found in 1(3.6%), 11 (39.3%) and 25 (89.3%) of isolates, respectively. However, the qnrA and qepA genes were not detected among isolates.

**Conclusion:** The resistance to fluoroquinolones is relatively high among K. pneumonia and mutations in QRDR of topoisomerase genes play an important role for this resistance. The plasmid-mediated genes also increase the level of resistance. The mutations outside the QRDR of topoisomerase genes also occur, but their exact role in resistance needs to be clarified.

**Keywords:** Fluoroquinolones resistance, Klebsiella pneumoniae, QRDR mutations, PMQR determinants

# P63 - 304: EVALUATION OF PHENOTYPIC ACTIVITY OF EFFLUX PUMP IN MULTI –DRUG RESISTANT PSEUDOMONAS AERUGINOSA ISOLATES BY CARTWHEEL METHOD

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**Background and Aim:** Pseudomonas aeruginosa is cause of 9% of nosocomial infections and after Staphylococcus aureus and E. coli is the third cause of these infections. One of the problems with Pseudomonas aeruginosa-related infections is prevalence of Multi-Drug Resistant isolates that is occurred by different mechanisms. Bacterial efflux pumps are capable of a wide range of antibiotics and detergents to efflux out of the cell. The aim of study was determining phenotypic activity of efflux pumps in MDR strains of Pseudomonas aeruginosa.

**Methods:** 50 strains of P. aeruginosa were isolated from clinical specimens of patients were admitted to Milad hospital and diagnosed by biochemical tests. Antibiotic susceptibility of isolates was determined by disc diffusion method according to CLSI. After determining the MDR isolates, the ET-Br Cartwheel method was used for efflux pump activity.

**Results:**17 (34%) MDR strains of Pseudomonas aeruginosa that were resistant to more than two classes of antibiotics were detected. By Cartwheel method among MDR isolates , 9 (52%), 5 (30%) and 3 (18%) were inactive, active and over expression according to their efflux pumps. Among non MDR isolates, 9 (27%), 13 (40%), 11 (33%) were inactive, active and over expression, respectively.

**Conclusion:** The results showed that frequency of Inactive MDR Pseudomonas aeruginosa and inactive non-MDR P. aeruginosa strains were similar. Cartwheel is a reliable method for determining of efflux pump activity among all isolates of P. aeruginosa

**Keywords:** Efflux pumps, Pseudomonas aeruginosa, MDR

# P64 - 320: THE PATTERN OF THE DRUG RESISTANCE OF BACTERIA ISOLATED FROM URINARY TRACT INFECTIONS IN THE PATIENTS ADMITTED TO SHAHID GHAZI HOSPITAL OF SANANDAJ CITY

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**Background and Aim:** Change of antibiotic resistance pattern as one of the global health warning issues to be considered.The aim of this study was to evaluate resistance and antibiotic susceptibility pattern of bacteria isolated from urinary tract infections in the patients referred to Shahid Ghazi Hospital of Sanandaj city.

**Methods:** This cross-sectional study was conducted on 114 patients with urinary tract infections and admitted to Shahid Ghazi Hospital in the 2014. Antimicrobial resistance profile of bacteria isolated was determined by Kirby-Bauer disk diffusion method.

**Results:** From 114 cases with urinary tract infection, 96% belongs to the women and 4% belongs to the men. The relative frequency of bacteria isolated from the urine samples in bacterial culture were 74% Escherichia coli, 20% Staphylococcus spp., 3% Streptococcus spp., 2% Klebsiella spp. and 1% Pseudomonas spp. In conjunction with Escherichia coli, the most abundant gram-negative bacteria identified in this study, the most and the least antibiotic susceptibility were for nitrofurantoin and sulfamethoxazole, respectively. Staphylococcus and Streptococcus isolates had the most resistance to ampicillin and sulfamethoxazole and the most susceptibility to nitrofurantoin and gentamicin. Klebsiella and Pseudomonas had the most antibiotic resistance for tetracycline and co-trimoxazole and the most susceptibility to gentamicin and amikacin, respectively.

**Conclusion:** The results of this study showed that the changes in the resistance patterns of the bacteria can be a serious warning. So that the antibiotics prescribing should be done based on susceptibility testing and necessary conditions.

**Keywords:** Drug resistance, Urinary tract infections, Humans

# P65 - 329: ANTIMICROBIAL EFFECT OF AQUEOUS EXTRACT OF BERBERIS VULGARIS FRUIT ON ESCHERICHIA COLI'S ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTION.

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**Background and Aim:** Infections of the lower urinary tract are common occurrences in women. Because of the chronic nature of urinary tract infections (UTIs) and the potential for antibiotic resistance, a natural approach to prevention and treatment is desirable. The aim of this study was to evaluate the antibacterial activity of aqueous extract of Berberis vulgaris fruit on 50 strain of Escherichia coli (E. coli) isolated from urine samples of patients suffering from UTI.

**Methods:** Aqueous extract of Berberis vulgaris fruit was subjected to in vitro antibacterial assay against human pathogenic Escherichia coli, employing cup diffusion method. Zone of inhibition were compared with the standard antibiotic. Microdilution method were used to determine the minimum inhibitory concentration (MIC) of extract.

**Results:** The aqueous extract of Berberis vulgaris fruit showed zone of inhibition in the range of 24 mm. The lowest minimum inhibitiry concentration was about 3.9 mcg/mL and the lowest bacericidal concentration was 7.81 mcg/mL.

**Conclusion:** The present study shows the potential antimicrobial properties of aqueous extract of Berberis vulgaris fruit, indicating the possibilities of its potential use in the prevention and treatment of urinary tract infections

**Keywords:** Urinary tract infection, Berberis vulgaris, Esherishia coli

# P66 - 341: PREVALENCE OF BLANDM-1-PRODUCING ESCHERICHIA COLI IN ASIA : A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** NDM-1 gene (blaNDM-1) -producing Escherichia coli is allegedly perceived as one of the most indispensable multidrug-resistant bacteria causing infections in hospitals and clinic domains. In numerous Asian countries, sporadic studies have been conducted to investigate the prevalence of blaNDM-1-producing E. coli. The nobility of the present study was to determine the precise prevalence of blaNDM-1-producing E. coli in different parts of Asia indeed.

**Methods:** Several international databases including Medline, Embase, and Web of sciences were searched from March 2005 to Jan 2016 to discern studies addressed the prevalence of blaNDM-1-producing E. coli in Asia. Comprehensive meta-analysis (V2.2, Biostat) software was used to interpret the data.

**Results:** Of the 588 records identified from the databases, 15 studies fulfilled the eligibility criteria ostensibly. The analyses manifested that the prevalence of blaNDM--producing E. coli was 30.7% [95% confidence interval (95% CI) 16.2-50.2] in the analyzed Asian countries. Hence, the further stratified analyses indicated that the prevalence of blaNDM-1-producing E. coli was higher in the probes, particularly after 2010.

**Conclusion:** It was magnificently attained that the relatively high prevalence of blaNDM-1-producing E. coli merit in our analysis. Moreover, regular surveillance for hospital associated infection, monitoring antibiotic sensitivity pattern, and formulation of definite antibiotic policies advocates viable roles for prevention and control of blaNDM-1-producing E. coli certainly.

**Keywords:** NDM-1, E. coli, Meta-analysis, Prevalence, Asia

# P67 - 342: INVESTIGATING THE ANTIBACTERIAL EFFECT OF URTICA DIOICA (NETTLE) EXTRACT ON MULTI-DRUG RESISTANT ACINETOBACTER STRAINS ISOLATED FROM PATIENTS IN ICU OF HAZRAT-E RASOOL AKRAM HOSPITAL IN TEHRAN DURING 2016-2017

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**Background and Aim:** Acinetobacter is one of the dangerous pathogens in hospitals. It is a gram-negative opportunistic bacterial pathogen that is resistant to most antibiotics. Infections that arise from the Multi-Drug Resistant (MDR) Acinetobacter are considered the major threat to human health. Nettle is commonly used in traditional medicine for curing different diseases and it has an antibacterial effect. The aim of this study was to investigate the antibacterial effect of Nettle extract on MDR Acinetobacter isolated from patients in ICU ward of hospital in Tehran.

**Methods:** This study was performed on 250 cases of patients admitted in ICU of Hazrat Rasoul Akram hospital during 2016-2017. 6 Acinetobacter MDR strains were isolated and identified by disc diffusion method and selected for antibacterial analysis. The antibacterial assay was done using the broth micro-dilution method at concentrations 29 to 0.05 µg/ml of Nettle extract. Inhibition zone diameter and MBC assay was performed for all strains. ATCC strain was used in parallel for quality control of testing procedure.

**Results:** According to results obtained from antibacterial assay, all selected strains were sensitive to different concentration (29 -2.41 µg/ml) of Urtica dioica extract. The Urtica dioica extract at the concentration of 29 µgr/ml indicated inhibitory activity against MDR Acinetobacter and ATCC strains.

**Conclusion:** These finding indicated that Nettle extract could be useful in combating emerging drug-resistance caused by resistant Acinetobacter. Therefore, considering the antibacterial effect of herbal extracts and their cost effectiveness, they can be used in parallel with antibiotics against resistant bacteria, and even the multidrug resistant ones causing nosocomial infections.

**Keywords:** Multidrug-resistant, Acinetobacter, Urtica dioica extract

# P68 - 343: FREQUENCY OF TETRACYCLINE RESISTANCE GENES (TET K,TETM, TETL AND TETO) IN STAPHYLOCOCCUS AUREUS ISOLATED FROM TWO HOSPITAL IN SHIRAZ OF IRAN.

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**Background and Aim:** Staphylococcus aureus is one of the most important nosocomial infections. Antibiotic resistance in this bacterium is a major challenge for public health system. Broad-spectrum antibiotics like Tetracyclines used for treatment and prevention of bacterial infections. The aim of the present study was to determine the prevalence of tetracycline resistance genes in clinical isolates of S. aureus.

**Methods:** In this study a total of 100 nonduplicated S. aureus isolated from different clinical samples in two hospitals in Shiraz city. Antimicrobial susceptibility pattern of isolates was performed by using Disk diffusion method against nine antibiotics including tetracycline, doxycycline, minocycline, erythromycin, kanamycin, gentamicin, tobramycin, amikacin and oxacillin

**Results:** Our results showed that the highest rate of resistance observed against tetracycline 47.93%. The resistance rate to doxycycline and minocycline were 20.66% and 3.3% respectively. Nearly all of the tetracycline resistance isolates harbored tetK gene 81.03% and tetM gene detected in 56.89% of isolates. None of the isolates were positive for tetL and tetO genes.

**Conclusion:** The resistance rate of S. aureus to tetracycline is high in this study. This study showed the importance of tetK and tetM genes in resistance to tetracycline. Regarding to the high detection of tetK gene in resistant isolates, this gene has the most important role in resitance to tetracycline in our study

**Keywords:** Staphylococcus aureus, tetracycline, antibiotic resistance, tetK, tetM

# P69 - 345: AMINOGLYSIDE RESISTANCE (AME) GENES AMONG CLINICAL STAPHYLOCOCCUS AUREUS ISOLATED FROM HOSPITALS IN SHIRAZ IRAN

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**Background and Aim:** Staphylococcus aureus is an important nosocomial pathogen, all around the world. Despite the emerging widespread resistance among Staphylococcus, aminoglycosides usually used in combination with other antibiotics for treatment of serious S. aureus infections.Resistance to these classes of antibiotics is one of the most important problems in treatment of S. aureus infections. The aim of the present study was to determine the frequency of aminoglycoside resistance genes in S. aureus isolated from burn patients at a hospital in Shiraz

**Methods:** A total of 100 isolates of non duplicated clinical isolates of S. aureus collected from hospital Shiraz city. Conventional laboratory test were used for identification of S. aureus at species level and then confirmed by detection of nucA gene. Resistance to methicillin was determined by detection of mecA gene. Antimicrobial susceptibility pattern was tested against by Disc Agar Diffusion Method. Frequency of aminoglycoside resistance genes (aac(6')-Ie-aph (2'')-I, aph (3')-IIIa and ant (4')-Ia) were evaluated by multiplex-PCR method

**Results:** The rates of resistance to various antibiotics were as follows: kanamycin, 39.75%; tobramycin, 20.75%; gentamicin, 19.44% and amikacin, 24.77%. Forty four (36.36%) of isolates weree methicillin resistant S. aureus (MRSA). The most prevalent AME genes included aac(6')-Ie-aph(2"(97.22%) followed by aph(3')-IIIa (61.33%) and ant (4')-Ia (8.33%) were detected in aminoglycoside resistant isolates

**Conclusion:** This results showed that the importance of AME genes especially aac(6')-Ie-aph(2" in resistance to aminoglycoside antibiotics,hence continued surveillance in infection control policy is necessary in hospital community to reducing further resistance

**Keywords:** Staphylococcus aureus, Aminoglycoside resistance, aac(6')-Ie-aph, aph(3')-IIIa

# P70 - 347: DETECTION AND CHARACTERIZATION OF SHIGELLA SPECIES ISOLATED FROM PATIENTS SUFFERING FROM DIARRHEA BY MOLECULAR METHODS AND CULTURE TECHNIQUES

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**Background and Aim:** Shigella spp. are fastidious, non-motile and rod-shaped gram-negative bacterium that can cause a severe diarrhea illness called shigellosis.These bacteria belong to the Enterobacteriaceae family, with four serogroups include: subgroup A (S. dysenteriae), B (S. flexneri), C (S. boydii), and D (S. sonnei). These bacteria are in charge of almost 165 million cases of di¬arrhea every year. Thus, the aim of this study was detection and characterization of Shigella species isolated from patients suffering from diarrhea by conventional biochemical tests, antimicrobial susceptibility testing, and PCR method.

**Methods:** Stool samples were obtained from 522 (n=522) patients suffering from diarrhea. All strains were isolated by phenotypic methods. Antimicrobial susceptibility of Shigella strains was performed using the disc diffusion technique (Kirby-Bauer) according to CLSI recommendations. PCR was performed for detecting of the ipa gene in the Shigella isolates.

**Results:** Of the 522 study patients with diarrheal diseases 69 (13.21%) were positive for Shigella spp. Of these, 49.28% strains were identified as S.flexneri 31.9% as S.sonnei, 13% as S.boydii and 5.8% as S. dysenteria. Antibiogram pattern in this study revealed that the highest resistance percentage was related to Tetracycline and Ampicillin 58 (84%)and55 (80%), followed by Trimethoprim-sulfamethox¬azole 77% and Nalidixic acid 69%. The Shigella isolates, 89.85% carried invasive gene.

**Conclusion:** These findings confirm the need to formulate long-term surveillance pro¬grammes that would identify changes in antimicro¬bial susceptibility patterns and the dissemination of such information to clinicians.

**Keywords:** Shigella spp., Antibiotic resistance, Disc diffusion technique, Ipa gene

# P71 - 349: INVESTIGATING THE ANTIBACTERIAL EFFECT OF ALLIUM HERTIFOLIUM (SHALLOT) EXTRACT ON MULTI DRUG RESISTANT (MDR) KLEBSIELLA STRAINS ISOLATED FROM PATIENTS IN ICU OF RASOOL AKRAM HOSPITAL IN TEHRAN DURING 2016-2017

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**Background and Aim:** Nosocomial infection is one of the serious problems of healthcare centers. Antibiotic resistance can complicate treatment. Klebsiella, one of the opportunistic pathogens, can give rise to severe diseases. Typically, Klebsiella infections are nosocomial and more of these outbreaks have been caused by Multi-Drug Resistant (MDR) strains. Shallot extract consists of disulphide and trisulphide compounds (e.g. flavonoids) that have anti-bacterial effects.The aime of this study was to investigate the anti-bacterial effect of shallot extract on MDR Klebsiella isolated from patients in ICU ward.

**Methods:** 230 samples were collected from the patients in ICU of Rasool Akram Hospital during 2016-2017. klebsiella strains were isolated and identified using biochemical tests. Disc diffusion method was conducted to select MDR resistant strains. Inhibition zone diameter and MBC assay was performed for all strains. Then minimum inhibition concentration (MIC) of shallot extract against the MDR klebsiella strains was determined using broth micro-dilution method at concentrations 45 to 0.0875 µg/ml. ATCC strain was used in parallel for quality control of testing in procedure.

**Results:** According to results obtained from antibacterial assay, MIC of all MDR strains was 1.4 µg/ml and the MIC of ATCC was 0.7 µg/ml. The Shallot extract at the concentration of 45 µgr/ml indicated inhibitory activity against MDR klebsiella and ATCC strains.

**Conclusion:** The present study provides data indicating a possible use of the extract of shallot alone or in association with common antibiotics in the fight against infections involving MDR Klebsiella strains.

**Keywords:** Klebsiella, Multidrug Resistant, Allium hertifolium extract

# P72 - 350: ASSESSMENT OF EPIDEMIOLOGIC AND ANTIBIOTIC-- RESISTANCE URINARY TRACT INFECTION IN PATIENTS WITH NOSOCOMIAL INFECTION IN SEYEDALSHOHADA HOSPITAL IN URMIA IN 1395

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**Background and Aim:** Urinary infection is the most common of nosocomial infections and Antibiotic- resistance pattern in various regions is different .The aim of this study evaluate the isolated bacteria from clinical samples of patients with urinary tract infections and identification of antibiotic -resistance in seyedalshohada hospital in 1395

**Methods:** In this cross-sectional study, the population included all patients with urinary tract infection with positive culture in seyedalshohada hospital in 1395. For each sample after approval strains, antibiotic- resistance and sensitivity were accomplished

**Results:** 102 patients with urinary tract infection were identified through a positive urine culture. The prevalence in females was 42/68%. The most common isolated microorganisms were Escherichia coli (61%) and cocci (29/19%), respectively. Most of resistant in Ecoli strain was related to ceftriaxone (41/72%) and highest sensitivity in this strain reported for meropenem (62/58%). Also, cocci strains have shown most resistant to tetracycline and Ciprofloxacin (80%) and highest sensitivity to vancomycin (50%).

**Conclusion:** According to the culture results and antibiotic-sensitivity test Planning and monitoring of control and prevention of nosocomial infections and development of safe and effective therapeutic guidelines, to remove resistant organisms is recommended. As well as scientific and rational prescribing of antibiotics for the removal of the resistant organisms can be one of the mechanisms for the prevention of nosocomial infections. The results of this research help physicians prescribe logically antibiotics

**Keywords:** Urinary tract infection, antibiotic- resistance, nosocomial infection

# P73 - 351: THE INACTIVATION EFFECT OF DINI GENE ON RESISTANCE TO CIPROFLOXACIN IN ESCHERICHIA COLI STRAINS

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**Background and Aim:** Fluoroquinolones are potent, bactericidal antibiotics that inhibit DNA gyrase, which eventually leads to the formation of double stranded DNA breaks, stalled DNA replication forks and, ultimately, cell death. Because fluoroquinolones cause the formation of DNA breaks they are potent inducers of the SOS response, suggesting that SOS-induced mutagenesis may catalyse the evolution of resistance to fluoroquinolones. RecA plays a central role in recombination, DNA repair and SOS induction through forming a RecA- DNA helical filament. A member of the SOS regulon is the dinI gene which encodes a small protein containing 81 amino acid residues. DinI is a positive modulator of RecA function. DinI protein appears to greatly enhance RecA filament stability while leaving most RecA functions largely intact. The aim of study was to investigate the effect of the dinI gene inactivation on resistance to ciprofloxacin.

**Methods:** For this purpose, resistance to ciprofloxacin was produced stepwise and MIC was determined by serial dilution method.

**Results:** The results showed that only mutants with low and medium resistance to ciprofloxacin was produced in Escherichia coli dinI-.

**Conclusion:** In conclusion, it seems that the presence of dinI gene has a role in the production of ciprofloxacin high resistant mutants.

**Keywords:** dinI - SOS response- ciprofloxacin-Escherichia coli

# P74 - 352: DINI GENE EXPRESSION IN CIPROFLOXACIN RESISTANT ESCHERICHIA COLI MUTANTS

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**Background and Aim:** Resistance to antimicrobial therapies reduces the effectiveness of these drugs, leading to increased morbidity, mortality, and health care expenditure. Fluoroquinolone antibiotics are potent, broad-spectrum agents commonly used to treat a range of infections. The prevalence of fluoroquinolone (FQ) resistance in Escherichia coli has increased markedly in recent years In Escherichia coli, the SOS response is induced upon DNA damage. The RecA protein plays a principal role in the bacterial SOS response. Another member of the SOS regulon is the dinI gene. DinI protein destabilizes RecA filaments, but only at very high concentrations. At lower concentrations, DinI has a very substantial stabilizing effect on RecA filaments and does not significantly inhibit many RecA functions. Previous studies showed recA gene expression in ciprofloxacin resistant Escherichia coli dinI+ mutants increased. To see the effect of DinI concentration on RecA activity, the expression of dinI was measured in mutants resistant to ciprofloxacin.

**Methods:** For this purpose, dinI expression was determined by real time PCR.

**Results:** The results showed that dinI gene expression also increased in ciprofloxacin resistant mutants but not much more than recA expression.

**Conclusion:** This implies that DinI would have a stabilizing effect on RecA filaments in these mutants with overexpression of recA.

**Keywords:** RecA- DinI- fluoroquinolone- Escherichia coli

# P75 - 359: ANTIBIOTIC SUSCEPTIBILITY PATTERNS OF KLEBSIELLA PNEUMONIAE STRAIN ISOLATED FROM URINARY SPECIMENS .

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**Background and Aim:** Even though k.pneumoniae is recognized as one of the most important gram-negative opportunistic pathogens that caused urinary tract infection (UTIs), the aim of this work was to investigate the presence significance and combinations of antibiotic susceptibility patterns K. pneumoniae clinical isolates from urinary specimens. The infectivity of k.pneumoniae is exacerbated by its high potential of spreading in the care units and it's ability to readily acquire multiple drug resistance.

**Methods:** Antibiotic susceptibility was determined by the diffusion method on Muller Hinton agar. Antibiotics tested were: AMX (amoxicillin), AMC (amoxicillin, clavulanic acid), TCC (ticarcillin ,clavulanic acid), MZ (mezlocillin) and other antibiotics. In this work to investigate antibiotic susceptibility pattern in 100 k.pneumoniae.

**Results:** The evaluation of the susceptibility of the 100 isolates to22 antibiotics including 12 beta-lactam antibiotics combined or not with clavulanic acid ,show that 55.9% isolates had a low resistance level to AMX and TIC and susceptibility to MZ.

**Conclusion:** The antibiotic susceptibility analysis of the isolates showed that 25.9% were wild type ,determined by the probable chromosomal penicillinase of k.pneumoniae while 74.1%were multi-resistant. The coexistence or coevolution of resistance and virulence may be inherent to their genetic linkage in same genetic determinants and accessory elements.

**Keywords:** K. pneumoniae, antibiotic susceptibility, antibiotic, UTI

# P76 - 364: INVESTIGATION OF BLAIMP AND BLAVIM MEDIATED CARBAPENEM RESISTANCE IN ACINETOBACTER SPECIE

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**Background and Aim:** Acinetobacter baumannii is an important nosocomial pathogen and rapid spread of blaIMP and blaVIM metallo-beta-lactamase (MBL) producing of A. baumannii isolates causing nosocomial infections are of concern worldwide.

**Methods:** During a period of 9 months (July 2015 to March 2016), 100 isolates A. baumannii were collected isolated from patients referred to Imam Khomeini and Talegani hospitals Ahvaz Iran. The blaVIM isolates were identified by phenotypic tests and their antibiotic resistance pattern was determined by the disk diffusion. The presence of blaIMP and blaVIM genes was determined by PCR.

**Results:** Out of 77 isolates of 100 isolates A. baumannii, the most sensitivity observed for the antibiotic to Polymyxin B and colistin, Also the most resistance to antibiotic was reported for Ceftriaxone(98.7), Ceftazidime, Cefotaxime, Piperacillin-tazobactam,,Cefepime, Piperacillin(97.4%), Meropenem(94.8%), Imipenem(89%).Moreover, frequency of blaIMP and blaVIM genes were and 10(12.2%),17(22%), respectively.

**Conclusion:** The association between multidrug resistance and blaIMP and blaVIM genes were statistically significant. All the isolates that had positive blaIMP gene, were resistant to Meropenem and Also, 9 of 10 isolates that had positive blaIMP gene, were resistant to Imipenem. On the other hands, 14 of 17 A. baumannii isolates positive gene were resistant to Imipenem. Moreover, 15 of 17 A. baumannii isolates of Meropenem resistance hand blaVIM gene.

**Keywords:** Acintobacter baumannii, blaIMP gene, blaVIM gene

# P77 - 370: A STUDY OF PANTON- VALENTIN, MECA AND SCCMECV IN THE METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) FROM THE PATIENTS SAMPLES OF HOSPITALS OF RASHT IN IRAN

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**Background and Aim:** Strains of the PVL positive Staphylococcus aureus have a high virulence. Elements of MRSA and SCCmec are chromosomal-staphylococcal casts of relatively big fragments of DNA which are integrated into orfx gene of chromosome of Staphylococcus aureus. SCCs can code resistance to antibiotics.

**Methods:** In this study,93 clinical isolates of staphylococcus were obtained. Antibiotic sensitivity test was performed by use of Disk Diffusion method, and resistance to methicillin test was determined by Oxacillin-Disk pvl-gene assessment for all samples of Staphylococcus aureus isolates by PCR method was conducted using specific primers of pvl-gene. Then, the positive samples which had pvl-gene, in order to search for mecA, pvl and VSCCmec genes, were studied by use of the specific primers of each gene.

**Results:** Totally, 18 isolates (19.56%) were positive in terms of existence of pvl-gene, and among 18 positive pvl isolates, 15 isolates (83.33%) were MRSA and 3 isolates (16.66) were MSSA and 8 cases (44.44%) were positive from view point of possession of mecA. And, out positive PVL-samples, 10 cases of wound samples were observed. In each one of liquid and urine samples, 3 cases were seen. In blood samples, two cases and splinter samples, 1 case were observed, respectively. None of the pvl+ samples had VSCCmec gene cast.

**Conclusion:** In this study, considering that, out of the samples with pvl-gene, the maximum samples were MRSA and, almost, half of them had mecA gene, it can be said that there exists a significant relationship among them, but there wasn't any relationship between VSCCmec gene cast and these genes.

**Keywords:** MRSA, Panton Valentine Leukocidin, (PVL), Methicillin Resistance

# P78 - 371: SURVEY PREVALENCE AMINOGLYCOSIDE RESISTANCE GENES AMONG ACINETOBACTER BAUMANNII STRAINS ISOLATED FROM BURN PATIENTS IN TEHRAN, IRAN

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**Background and Aim:** Acinetobacter baumannii among the most common opportunistic pathogens associated with nosocomial infections, particularly in burn patients. Hospital Infections caused by these bacteria are difficult to treat. So the aim of the present study investigated the prevalence of genes encoding aminoglycoside-modifying enzymes in A. baumannii strains isolated from burned patients in Tehran, Iran

**Methods:** This study was conducted on 100 A. baumannii isolates collected from shahid Motahari hospital in Tehran. The age range of the population in this study was assessed 2 to 90 years. Antibiotic susceptibility testing was performed by disk diffusion according CLSI guidelines .Also use of PCR and sequencing for the presence of genes aphA6, aacC1, aadA1 and aad B were studied.

**Results:** A total of 100 strains studied almost all isolates to ceftriaxone, ciprofloxacin and ceftizoxime were resistant (100%), whereas the highest susceptibility was observed towards colistin sensitivity (100(. Percent, resistance to various aminoglycoside: gentamicin (93%), amikacin (90%), tobramycin (87%), respectively. aphA6 gene in 65 cases (81%), aad B gene in 72 (0.9%) cases, aacC1 gene in 21 patients (26%) and aadA1 gene in 37 (46%) of the isolates were identified

**Conclusion:** Our results showed that A. baumannii strains resistant to antibiotics used is increasing, so the implementation of appropriate programs to prevent the spread of the bacteria in the shahid motahari hospital is necessary.

**Keywords:** Aminoglycoside resistance genes, Acinetobacter baumannii, Multidrug resistance

# P79 - 372: IN-VITRO ANTIMICROBIAL AND ANTI-BIOFILM FORMATION ACTIVITY OF NEW BENZISOTHIAZOLES CONTAINING A B-LACTAM RING

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**Background and Aim:** Bacterial biofilms are complex structures in which bacterial population are enclosed in a matrix. They play a key role in the pathogenesis of many bacterial infections.

**Methods:** For studying the antimicrobial effect of new β-lactams 2-[1-(4-bromophenyl)-2-oxo-4-phenyl-3-azetanyl]-1H-1,2-benzisothiazole-1,1,3-(2H)-trione (A) and 2-[2-(4-chlorophenyl)-4-oxo-1-phenyl-3-azetanyl]-1H-1,2-benzisothiazole-1,1,3-(2H)-trione (B), nine standard bacteria, four bacteria which isolated from clinical samples and one yeast were used. The agar well diffusion method was done. The minimum concentrations of the compound to inhibit the microorganisms (MIC) and minimum concentrations of the ligand to killing the microorganisms (MBC) were determined. Also, the biofilm formation was evaluated.

**Results:** The antibacterial activity was assayed by measuring the diameter of the inhibition zone (IZ) that was formed around the well. For compound A the mean diameter of inhibition zone was 23.5 mm and for compound B it was 28.7 mm. Two compounds have both bacteriostatic and bactericidal effects on S. marcescens PTCC 1621 and S. aureus PTCC 1112. Biofilm formation by Proteus sp, E. coli ATCC 25922, P. aeroginosa ATCC 27853, S. marcescens PTCC 1621 and S. aureus PTCC 1112 is stopped by compounds A and B at concentration less than MIC and MBC. It means that the biofilm is not formed.

**Conclusion:** Compounds exhibited potential antibacterial activity. Also, the results are indicative of the desirable anti-biofilm effects of these compounds.

**Keywords:** Antimicrobial activity, agar-well diffusion, biofilm formation, β-lactam

# P80 - 373: IN-VITRO ANTI-BIOFILM FORMATION ACTIVITY OF 4-BENZYLIDENE-2-METHYL-OXAZOLIN-5-ONE

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**Background and Aim:** Biofilms which are formed by microbes have been found to cause a variety of infections in humans. When public health is threatened by bacteria, the synthesis or the discovery of new chemical entities, active against antibiotic resistant bacteria, becomes an essential principle.

**Methods:** The current study gives a report on the synthesis of 4-benzylidin-2-methyl-oxazoline-5-one as a moderate activity against bacteria. This compound was evaluated for its antibacterial potential by agar-well diffusion assay against bacterial species with clinical significance. MIC (minimum inhibitory concentration) and MBC (minimum bactericidal concentration) values were determined further to check the concentration ranges for significant inhibition. Also, biofilm formation and icaA gene expression were evaluated.

**Results:** By measuring the MIC and MBC values we found that this compound has a bacteriostatic and bactericidal effect on gram-positive and gram-negative bacteria and yeast; the former was more affected by the compound, which prevented biofilm formation in such strains as Staphylococcus aureus ATCC 25923, Micrococcus luteus PTCC 1110, Proteus sp, Enterococcus faecalis; Listeria monocytogenes and Staphylococcus aureus. The results showed that the icaA gene expression was reduced and that the compound 4-benzylidin-2-methyl-oxazoline-5-one has a good antimicrobial and anti-biofilm impact.

**Conclusion:** 4-benzylidene-2-methyl-oxazolin-5-one has an antimicrobial impact, especially on Gram positive bacteria. It can stop biofilm formation in 40% of microorganisms at sub-MIC concentrations. Furthermore, icaA gene expression was affected by 4-benzylidene-2-methyl-oxazolin-5-one, decreasing its expression in S. aureus.

**Keywords:** 4-Benzylidene-2-methyl-oxazolin-5-one, antimicrobial, biofilm, icaA, Staphylococcus

# P81 - 375: ANTIBIOTIC RESISTANCE AND BIOFILM FORMATION OF ISOLATED ACINETOBACTER BAUMANNII FROM CLINICAL INFECTIONS IN ZAHEDAN , IRAN

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**Background and Aim:** Acinetobacter baumannii is a human pathogen and resistant to many antibiotics. Its Biofilm is a community of bacteria attached to one surface by extracellular polymeric substances. Biofilm formation supports them from lethal effects such as antibiotics. Biofilm formation and its role in antibiotic resistance by A. baumannii is an important topic that was investigated in the present research.

**Methods:** Samples were collected from patients in different health centers in Zahedan, Iran. 50 isolates of A. baumannii were isolated and identified by biochemical tests. Antibiotic susceptibility tests to the selected antibiotics were evaluated by disc diffusion method and E-test. In the last step, cell surface hydrophobicity followed by biofilm formation tests on glass and plastic surface.

**Results:** All isolated strains of A. baumannii were resistant to ceftazidime, imipenem, meropenem, cefepime, ciprofloxacin, gentamicin and Ticarcillin and their resistances to these antibiotics were 96%, 98%, 90%, 92%, 76%, 80% and 98%, respectively. Sensitivity was 100% to colistin. Hydrophobicity index (HI) of 3 strains was less than 30% but 7 isolates showed HI more than 70%. Biofilm formation on glass was less than plastic in shaking state. But biofilm formation in static state was less than that in shacking state.

**Conclusion:** Antibiotic resistance as well as multidrug resistance is a common characteristic among strains of A. baumannii. Antibiotic resistance in Iran has been increased during recent years and it is recommended to know all mechanisms of this resistance to suppress their virulence.

**Keywords:** Acinetobacter baumannii, E-test, hydrophobicity index, biofilm

# P82 - 382: ANTIBIOTIC RESISTANCE OF STAPHYLOCOCCUS AUREUS AND S.INTERMEDIUS TO METHICILLIN

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**Background and Aim:** Given the prevalence of antibiotic resistance in bacteria for various reasons, including their excessive consumption, and on the other hand, the unwillingness of the livestock breeders to comply with the duration of prohibition of consumption on animal products after the end of the treatment period and also use These products in humans, antibiotic treatment in medicine and veterinary medicine have been associated with many problems.

**Methods:** In this regard, a study was conducted in the Department of Microbiology, Faculty of Veterinary Medicine, and University of Tehran. That way, out of 105 samples of milk and dairy products prepared from traditional and non-pasteurized milk, 63 Staphylococcus intermedius and 42 other Staphylococcus aureus isolates were isolated. These contaminations were confirmed by biochemical tests such as catalase and coagulase, and so on. The susceptibility and resistance of these isolates were investigated by antibiogram as compared to methicillin.

**Results:** The results obtained from the antibiogram for S. aureus and S. Intermedius were as follows: In total, 55 cases (approximately 52.4%) were resistant to methicillin antibiotics, and out of 50 others, 41 had sensitivity and 9 showed interstitial states.

**Conclusion:** In this study, high levels of resistance to methicillin in isolated bacteria were shown which can be hazardous in terms of public health.

**Keywords:** Methicillin Resistant, Antibiogram, Staphylococcus

# P83 - 392: ANTIBACTERIAL PROPERTIES AND CYTOTOXIC EFFECT OF A NOVEL SYNTHETIC PEPTIDE DERIVED FROM BACTERIAL PEPTIDE MICROCIN J25

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**Background and Aim:** Microcin J25 belongs to the class of small ribosomally synthesized antibiotics peptides that termed microcins and produced by Enterobacteriacea and display activity against closely related bacterial species. The aim of this study was preparation of a peptide comprising 14 amino acids derived from microcin j25 with a folded conformation by disulfide bond. Furthermore the antibacterial effects of peptide against the selected bacterial strains and toxicity on HT-29 cell line was determined.

**Methods:** The peptide was prepared by solid phase method and purified by using semi preparative HPLC systems. 96-well microplate assay used for determination of minimum inhibitory concentration (MIC). Cytotoxicity of the peptide derivative on HT-29 cell line assayed using MTT test.

**Results:** The peptide successfully synthesized and more than 98% purified. The results of MIC showed the peptide displays potent activity against E.coli (ATCC 35218) with MIC 3.9- 7.81µM and not active on Staphylococcus aureus and Salmonella enterica. The viability percentage of HT-29 cells was more than 80% up to highest concentration 200 µM tested. The hemolysis was very low less than 0.3%.

**Conclusion:** Collectively, the results showed that structural amino acid variation is tolerated in peptide microcin j25.Furthermore peptide acts specifically on bacterial strains and the toxic effects on mammalian cell line were minimal.

**Keywords:** microcin j25, antimicrobial peptides, cytotoxic effect, purification, HPLC

# P84 - 395: IDENTIFICATION OF CCR CASSETTE GENES IN CLINICAL ISOLATES OF STAPHYLOCOCCUS AUREUS AND TO SIGNIFY THE ASSOCIATION OF THE PRESENCE OF THE ALLELES WITH MULTI-DRUG RESISTANT STRAINS

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**Background and Aim:** Methicillin resistance in Staphylococcus aureus has become a global threat. The involvement of some important gene cassettes in this context the emergence of more resistant strains has provided. The aim of this study is to identify alleles cassette ccr methicillin-resistant Staphylococcus aureus strains and to determine the presence of these shortcomings associated with multi-resistant strains are.

**Methods:** In this study, 135 clinical isolates of methicillin-resistant Staphylococcus aureus was isolated by genotypic methods. Ccr gene cassette using specific primers Multiplex PCR method was evaluated qualitatively. Statistical data analysis software SPSS version 16 and the chi - square test was used.

**Results:** Out of 135 strains of Staphylococcus aureus resistant to methicillin, penicillin and erythromycin antibiotic resistance most frequently more than 90%, respectively. Also, ccr gene cassette in the study on genes ccrA / B1, ccrA / B2, ccrA / B3, ccrA / B4, ccrA2 / B, ccrC had taken place, respectively, in 2 isolates (1.3%) for gene ccrA / B1, 12 isolates (8.2%) for gene ccrA / B2, 15 isolates (10/34 percent) for gene ccrA / B3, 2 isolates (1.3%) for gene ccrA / B4, 4 isolates ( 8.2 percent) for gene ccrA2 / B and 22 isolates (15/87 percent) were positive for the gene ccrC. A significant correlation between the presence of these genes and antibiotic distribution was observed (P. value 0/05).

**Conclusion:** Multidrug resistance in clinical isolates of S. aureus could be the presence of certain genes in SCC gene cassette that has a significant effect on the resistance.

**Keywords:** Drug Resistance, methicillin-resistant Staphylococcus aureus, cassette choromosome, Gene Allele

# P85 - 404: MOLECULAR CHARACTERIZATION AND PHYLOGENETIC ANALYSES OF NEURAMINIDASE GENE SEGMENT (NA) IN A/H1N1 INFLUENZA VIRUS ISOLATES CIRCULATING IN IRAN 2014

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**Background and Aim:** Influenza is one of the most important emerging and reemerging infectious diseases in the world. The aim of this study is molecular and phylogenetic analyses of the variations in circulating influenza A/H1N1 virus isolates during 2014-2015 in Iran and investigate on the drug resistance conditions in the related Iranian isolates.

**Methods:** Throat samples from Iranian patients with acute respiratory tract infection were subjected for typing and subtyping by multiplex real-time RT–PCR. Seven positive samples were randomly selected and full-length amplification of Neuraminidase gene (NA) were carried out by RT-PCR. The related amplicons were sequenced and analyzed by bioinformatic software.

**Results:** Phylogenetic analysis on the NA gene of the A/H1N1 isolates revealed a high degree of sequence identity with the corresponding NA genes from viruses circulating in the USA, Russian, India, Thailand, and East Asia region. Moreover, the NA sequences showed point mutations N44S, V106I, V241I, N248D, N369K; resulted in increasing stability and improve transmission of the viruses. The NA sequences showed a similarity of 98-99% with the reference strain NC_026434.1 /California/2009. 52.5% of mutations were silent. On amino acid level, the dedicated sequence of NA protein showed 97% identity among isolates. Oseltamivir and zanamivir resistant mutations were not detected in the isolates.

**Conclusion:** Gathering NA sequence data of influenza viruses isolated from Iran and compare it with counterpart data from other geographical regions would be helpful to capture the evolutionary dynamic, epidemiological rules governing antigenic drift and reveal the antiviral drug (neuraminidase inhibitors) sensitivity of human influenza A (H1N1) viruses.

**Keywords:** Influenza A/H1N1 virus, Phylogenetic analysis, Neuraminidase, Iranian isolates

# P86 - 416: PHYTOCHEMICAL SCREENING AND EVALUATION OF IN VITRO ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF THE INDIGENOUS MEDICINAL PLANT NORTH OF IRAN

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**Background and Aim:** We analyzed the antioxidant and antimicrobial activities of the leaves of from Nerium oleander,Vinca minor and thymus vulgaris in ethanol (Etoh) and water (WA) solvents.

**Methods:** Employing standard analytical method.

**Results:** Ethanol extract had the most antimicrobial activity,while the aqueous extract had the least antimicrobial activity.Investigating antioxidant properties showed that the ethanol extract has stronger effect than the aqueous extract.thyme leaves extract has higher inhibitory effect as compared with other species while the minimum inhibitory concentration of the ethanol extract on indicator bacteria are 25,50 and 100 mg/ml, respectively.

**Conclusion:** The results indicate that leaves of Thyme could be used as natural antioxidant and antimicrobial agents.

**Keywords:** Phytochemical, antioxidant, inhibition, herbal extracts.

# P87 - 419: PSEUDOMONAS AERUGINOSA AND ACINETOBACTER BAUMANNII ISOLATES ANTAGONISTIC EFFECTS OF ANTIBIOTICS EXTENDED- SPECTRUM B- LACTAMASE ENZYME

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**Background and Aim:** The rising trend of antibiotic resistance among Acinetobacter baumannii and Pseudomona aeruginosa has threat to global health. The most common resistance mechanism in these bacteria can produces beta-lactamase genes transferring on genetic elements.

**Methods:** Bacteria were collected from Pars and Erfan hospitals in Tehran. Antagonistic effects of drugs consumed were assayed by Disc diffusion Agar method, and phenotypic detection of extended-spectrum β-lactamase enzyme (ESBLs) by using disk diffusion Agar Method and Combined Disk Method.

**Results:** In this study, none of the isolates showed resistance against colistin. the resistance against tested antibiotics were as follow: in 38 Pseudomonas aeruginosa and 40 Acinetobacter baumannii isolates was observed. in %100 and 97/5% against to cefotaxime, %100 and 97/5% against to ceftriaxone, %94/73 and 95% to meropenem, %97/36 and 95% to imipenem, respectively The incidence of ESBLs in P. aeruginosa isolates, using disk Diffusion Method with ceftazidime and ceftriaxone and combined disc method were %88, %100, and %24, and in A.baumannii isolates, it was reported to %100, %100, and %7, respectively. Antagonistic effects of imipenem and ceftazidime, ceftriaxone, and aztronam were observed to be %27.3, %27, and %23 in P. aeruginosa isolates, respectively. Meanwhile, this effect was not observed in A. baumannii isolates.

**Conclusion:** In this study, the prevalence of A.baumannii and P.aeruginosa resistant isolates is very uncomfortable. Therefore, a combination of drugs such as astronomy gentamicin and ceftazidime are effective in combination therapy.

**Keywords:** Pseudomonas aeruginosa, Acinetobacter baumanii, Antibiotic Resistance, ESBLs

# P88 - 423: DETECTION OF QNRS GENE IN ANTIBIOTIC RESISTANT SALMONELLA ENTERICA STRAINS

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**Background and Aim:** The infection caused by Salmonella spp. is common and endemic in Iran, but reports about prevalence of quinolone resistant Salmonella strains is limited. Therefore the aim of this study was to investigate molecular study of antibiotic resistance against quinolone antibiotics among Salmonella enterica strains isolated in Tehran.

**Methods:** Salmonella strains were isolated and identified by standard microbiological methods. Antimicrobial susceptibility and screening tests for quinolone resistant Salmonella strains were performed according to the standard CLSI guidelines. Total genomic and plasmid DNA were extracted by boiling method. The molecular investigation was done by using specific primers for detection of qnrS gene by polymerase chain reaction (PCR).

**Results:** In total, 138 Salmonella strains were isolated and identified. Amongst isolates studied, 92(66.66%) were resistant to nalidixic acid. None of the isolates was resistant to ciprofloxacin.. 52 strains (56.52%) harbored qnrS gene.

**Conclusion:** The results of this study show high prevalence of resistance to nalidixic acid and qnrS gene in Salmonella isolates that means a serious problem. These finding reinforce the massage that control of spread of antibiotic resistance requires the prudent use of antibiotics not only in humans but also in animals so this problem need much more proficiency and management.

**Keywords:** Nalidixic acid resistance, qnrS gene, Salmonella enterica, Quinolone

# P89 - 436: EVALUATION OF ANTIBACTERIAL EFFECT OF ALLIUM SATIVUM ALCOHOLIC EXTRACT ON EXTENDED-SPECTRUM BETA-LACTAMASE(ESBL) PRODUCING STRAINS OF ESCHERICHIA COLI ISOLATED FROM UTI IN TABRIZ

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**Background and Aim:** Escherichia coli is the most common bacteria that cause urinary tract infections in women. Nowaday, many strains of E.coli have been resistant to beta-lactam antibiotics and bacterial Beta-lactamases, have an important role. The aim of this study was to investigate the role of alcoholic extract on Extended-spectrum betalactamase(ESBL) producing strains of E.coli

**Methods:** After preparing the alcoholic extract of Allium sativum, concentrations 25, 50, 100, 200 and 400 µg /ml of this extract on ESBL-producing isolates of E. coli was investigated, by agar disk diffusion method.

**Results:** The test is repeated 3 times and the results revealed that the inhibitory effect of Allium sativum alcoholic extract on the growth of ESBL-producing strains of E. coli in concentrations 100 and 400 ?g /ml, was significantly increased .($P<0.05$)

**Conclusion:** Based on this study results, The alcoholic extract of Allium sativum has considerable inhibitory effects on ESBL-producing E. coli strains , in vitro.

**Keywords:** Allium sativum, Escherichia coli, ESBL, Urinary tract infection.

# P90 - 440: A SARVEY FOR ANTIMICROBIAL RESISTANCE PATTERNS OF ACINETOBACTER CLINICAL ISOLATES IN ZAHEDAN HOSPITALS 2017

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**Background and Aim:** Resistance patterns among nosocomial bacteria pathogens may vary widely from country to country at any given point and within the same country over time. Acinetobacter is one of the most important bacteria that cause severe hospital-acquired infections. Therefore, surveillance of the antibiotic resistance of acinetobacter is necessary. The aim of this study was antibiotic resistance of acinetobacter spp. Isolates were obtained from urinary tract infections samples.

**Methods:** 65 isolates from clinical specimens of inpatients of zahedan city hospitals were characterized with conventional biochemical methods.Antibacterial sensitivity tests were carried out with 11 antibiotics by disc-diffusion technique.MICs of all isolates were determined against 4 important antibiotics by utilizing E-TEST method

**Results:** 45 isolates identified as acenitobacter.All acinetobater strains were resistant to ceftriaxon and cefotaxime (97.8%), Sterptomycin (97.8%), ciprofloxacin (93.3%), rifampin (91.1%), ceftazidime (88.9%), imipeneme (86.6%), tetracycline (82.2%), amikacin (68.9%), gentamycin (57.8%), ampicillin (55.6%).

**Conclusion:** The data showed that the antimicrobial resistance of acinetobacter species are very high in clinical isolates in Zahedan hospitals in compare to ther studies.the results highlight the need for further infection control programs and implementation of restrict antibiotic policies in Zahedan hospitals.

**Keywords:** Antibiotic resistance, acinetobacter, MIC, nosocomial infection, antibiogram

## P91 - 451: A REVIEW OF DRUG RESISTANT TUBERCULOSIS IN IRAN

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**Background and Aim:** Tuberculosis (TB) is one of the largest health problems in world's especially in most of the developing countries. Treatment of this disease especially with the emergence of different kinds of drug resistant strains, have been encountering with difficulties. Important selected papers published in journals have been reviewed in this study.

**Methods:** A literature review have been done with key words of drug-resistant, MDR, and XDR tuberculosis in Persian and English resources including PUBMED and Scopus.

**Results:** There are very low number of officially published articles about tuberculosis drug resistance of Iran in Persian and English sources, as other branches of microbiology yet. In 2009, multidrug-resistant TB in the country was reported as 0.5-27.9 per cent in isolated strains. The overall resistance of TB in our study in Golestan and Semnan was 0 and 8.57% respectively. MDR resistance was reported from 1.5 %( in Bushehr city) to 9.3% in Ardabil, as well as XDR resistance from 0 in most provinces to 0.5 % in Tabriz.

**Conclusion:** The results showed that despite a decreasing incidence of disease, the number of relative drug resistance is increasing; while the resistance is almost controlled in large countries such as China. Especially resistance of tuberculosis in provinces near to some borders with endemic countries of TB should be considered and screened by Ministry of Health.

**Keywords:** Tuberculosis, drug resistance, Iran

# P92 - 458: ISOLATION AND SCREENING OF ACTINOBACTERIA WITH POLYMYXIN RESISTANT REDUCING ACTIVITY AGAINST ACINETOBACTER BAUMANNII

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**Background and Aim:** Actinobacteria are Gram-positive, filamentous , main inhabitants of the soil and the most important sources of antibiotics. Actinobacter baumannii as one of the most important drug resistant pathogens, this project was aimed to finding Actinobacterial stains capable in producing drug resistant reducing metabolites against A. baumannii.

**Methods:** The soil samples of Maranjab desert were treated by heating at 100 ◦C for 1 h, cultured in ISP2 agar and incubated at 28 ◦C for 2 weeks. The isolates were inoculated in ISP2 broth and incubated at 28◦C, 200 rpm. After separation of the biomass by centrifugation, the activity of fermentation broth against an antibiotic-resistant clinical isolate of A. baumannii was measured by agar diffusion assay plate containing sub-MIC of polymyxin. The potent strains were selected and their fermentation broth were extracted by ethyl acetate. After removing the solvent, MIC of the fermentation broth extract of actinobacteria was studied. Finally, the selected strains were identified by 16SrRNA gene analysis.

**Results:** From 100 soil samples, 145 strains of actinobacteria were isolated. Among them, 8 strains were inhibited the growth of A. baumannii in the presence of sub-MIC of polymyxin. This isolates were belonged to the Micromonospora, Streptomyces and Saccharothrix. Streptomyces sp. UTMC 2828 had the highest activity in reducing the resistance of A. baumannii to polymyxin.

**Conclusion:** Maranjab desert is good source for exploring and finding Actinobacteria with biological activity against A. baumannii. This results can be useful to finding new species of actinobacteria and potent drug candidates

**Keywords:** Actinobacteria, Acinetobacter baumannii, Antibiotic resistance, Maranjab desert, polymyxin

# P93 - 486: PHENOTYPIC AND GENOTYPIC EVALUATION OF DRUG RESISTANCE PATTERN IN STAPHYLOCOCCUS AREUS ISOLATED FROM CLINICAL SAMPLES

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**Background and Aim:**Staphylococcus aureus as the most common species has an important role in the development of hospital.

**Methods:** n this study, 102 isolates of S. aureus strains were collected from various clinical specimens in Yasouj hospitals, and evaluate the phenotypic susceptibility to 14 antibiotics by disk diffusion. In order to determine the prevalence of antibiotic resistace in Staphylococcus aureus strains genotyping, detection of mecA, aac, ermA and blaZ genes was performed using PCR test. The minimum inhibitory concentration of the antibiotic vancomycin also in isolates were evaluated.

**Results:** Accordig to the results,the rate of resistance to erythromycin 73%, ciprofloxacin 87%, cefoxitin 54%, penicillin 98%, gentamicin (31%), trimethoprim (38%), cephalexin (60%), azithromycin 76%, oxacillin, 91%, clindamycin 20%, ceftizoxime 87%, vancomycin 76%, tobramycin (29%), kanamycin 51% , 54% methicillin was showed, While the prevalence of genes mec A, aac, ermA and bla Z respectively was 69%, 25%, 51% and 55% . The minimum inhibitory concentration of vancomycin than 2 micrograms per liter was determined.

**Conclusion:** The findings showed that the prevalence of methicillin-resistant Staphylococcus aureus strains was remarkable. Antibiotics tobramycin, clindamycin, gentamicin can be the best choice for treatment of infections caused by strains of methicillin-resistant Staphylococcus aureus. High resistance of methicillin-resistant strains to antibiotics wide range of first and second line treatment, is a serious warning to public health.

**Keywords:** S. aureus, Drug resistance, mecA, ermA genes

# P94 - 487: ANTIBIOTIC SUSCEPTIBILITY PATTERN AND THE PREVALENCE OF STAPHYLOCOCCUS AUREUS ISOLATED FROM SKIN AND SOFT TISSUE IN TEHRAN RAZI SKIN HOSPITAL (2014-15)

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**Background and Aim:** Staphylococcus aureus (S. aureus) is the most common cause of skin and soft tissue infections. This study aimed to determine the prevalence of S. aureus isolated from skin and soft tissue and antibiotic susceptibility pattern among the patient hospitalized in Razi skin hospital (Tehran-Iran).

**Methods:** This cross-sectional study was conducted on patients (n=400) with skin and soft tissue infections in Razi skin hospital. Sterilized swabs were used to collect the skin infection samples. S. aureus isolates were confirmed using biochemical tests (gram staining, catalase, coagulase, DNase test and manitol fermentation tests).

**Results:** 51.3 %( 205 out of 400) of isolates were S. aureus. Ninety six (46.8%) of isolates were methicillin and penicillin-resistant S. aureus. All of the isolates showed sensitivity to vancomycin, linezolid. 98% of the isolates were susceptible to daptomycin. One-hundred sixteen (56.6%) isolates were multi- drug resistant.

**Conclusion:** More than half of the skin and soft tissue infections were caused by S.aureus. More than 46 percent of the isolates were methicillin resistant. The highest resistance to penicillin was observed

**Keywords:** Staphylococcus aureus, Skin and soft tissue infection (SSTI), Antibiotic susceptibility pattern, MRSA

# P95 - 506: EVALUATION OF THE EFFECT OF SMOKE OF ANBAR NASARA (DONKEY DUNG) EXTRACT ON PSEUDOMONAS AERUGINOSA.

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**Background and Aim:** The use of medicinal smokes in treatment of many diseases, including infectious microbial diseases, has long been popular in Iran. This study aimed to compare the antimicrobial effects of smoke of Anbar Nasara (donkey dung) extract on Pseudomonas aeruginosa with common antibiotics.

**Methods:** In this experimental study, donkey dung smoke as medicine and antibiotics as a control group were considered. Standard strain of Pseudomonas Aeruginosa was cultured in suitable mediums. Anbar Nasara extract was prepared without use of solvent, in order to prevent the antibacterial effect of solvent on microbes. Dilution and disk diffusion test was performed 3 times for Pseudomonas Aeruginosa.

**Results:** The paired samples T test showed that the mean of inhibition zone of Pseudomonas Aeruginosa by Anbar Nasara smoke was significantly greater than the inhibition zone induced by antibiotic. ($p<0.001$)

**Conclusion:** The smoke of Anbar Nasara extract has a significant inhibitory effect on Pseudomonas Aeruginosa growth; so it can be offered as a medicine.

**Keywords:** Anti-Bacterial Agents, Pseudomonas aeruginosa, Smoke.

# P96 - 516: MOLECULAR INVESTIGATION OF AAC(3)-II AND AAC(6')-IB GENES AMONG KLEBSIELLA PNEUMONIAE ISOLATES WITH AMINOGLYCOSIDE RESISTANCE PHENOTYPE

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**Background and Aim:** Aminoglycoside antibiotics often use in combination with beta lactam to treat Gram negative bacterial infections. Bacteria utilize several enzymatic mechanisms such as acetyltranseferase, phosphotransferase and nucleotidyltransferase for resistance to these antibiotics. In the present study, at the first we investigated the Aminoglycoside resistance phenotype among Klebsiella pneumonia isolates after that we detected aac(3)-II and aac(6')-Ib genes genes related to Aminoglycoside resistance.

**Methods:**The study was conducted on 100 K. pneumonia strains isolated from different clinical samples. Antibacterial susceptibility was examined against six aminoglycoside antibiotics by disk diffusion method. Presence of genes was detected among isolates with positive phenotype result using specific primer and PCR method.

**Results:** Of 100 k.pneumonia isolates, 60%, 3%, 34%, 44%, 66% and 60% were resistance to Gentamicine, Neomycin, Kanamycin, Sterptomycin, Amikacin, Tobramycin respectively. Fifty isolates showed a positive resistance result to more than 3 aminoglycoside antibiotics. Prevalence of aac(3)-II gene was 93% and aac(6')-Ib gene was 85%. Eighty five of isolates carried both of genes.

**Conclusion:** The current study demonstrated a high prevalence of aac(3)-II and aac(6')-Ib genes among k.pneumonia isolates with a positive aminoglycoside resistance phenotype.

**Keywords:** Klebsiella pneumoniae, aac(3)-II gene, aac(6')-Ib gene, Aminoglycoside antibiotics,

# P97 - 525: PREVALENCE AND ANTIBIOTIC RESISTANCE PATTERNS IN CLINICAL ISOLATES OF PSEUDOMONAS AERUGINOSA IN TEHRAN, IRAN

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic pathogen and etiologic agent of nosocomial infections. It is usually resistant to antimicrobial agents and is one of the most leading causes of morbidity and premature mortality in patients. One of the main antimicrobial resistance mechanism is the efflux pumps that can selectivity eject varieties of substances, such as antibiotics. This study aimed to investigate the prevalence of resistance and antimicrobial susceptibilities of P. aeruginosa isolated from patients admitted to clinical specimen of Azad University Teaching Hospitals.

**Methods:** A total of 100 clinical isolates of P. aeruginosa were collected during June 2015-March 2016. Bacterial identification was performed using standard laboratory methods. Susceptibility to ten antimicrobial agents was performed by disk diffusion method. PCR gene amplification was performed for detection of aac6, tetA, kPC and blaOXA-10 genes using specific primers.

**Results:** Among the 100 isolates of P. aeruginosa, resistance to imipenem, ciprofloxacin, amikacin, aztreonam, tobramycin, ceftazidime, gentamicin, carbenicillin, tetracycline and norfloxacin, were 20, 52, 10, 17, 21, 20, 55, 45, 79, 81 percent, respectively. The aac6, tetA and bla-OXA10 genes were detected in 43, 70 and 36 % of isolates, respectively. Also, KPC gene was not detected in the isolated of this study.

**Conclusion:** By consideration of the increasing rate of the multidrug resistant P. aeruginosa prevalence, using the appropriate treatment protocol based on the detection of antibiotic resistance genes pattern of the strains is highly recommended.

**Keywords:** P. aeruginosa, Multidrug resistant, Antibiotic resistance patterns

# P98 - 527: MOLECULAR DETECTION OF CLASS I AND CLASS II INTEGRON AMONG KLEBIELLA PNEUMONIA STRAINS ISOLATED FROM URINARY TRACT INFECTIONS

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**Background and Aim:** Bacteria can protect themselves against most antibiotics through acquire genetic mobile elements like plasmids, transposons and integrons. Integrons contain an int gene which encodes an intagrase. At least seven class of integron have been found. In the present study we investigated integron class I and II among klebsiella pneumonia strains by specific primer for int gene.

**Methods:** One hundred K.pneumonia isolates were collected from three hospitals. Antibiotic susceptibility analysis was done by disk diffusion method against seven antibiotics. DNA was extracted by boiling method with some modifications. PCR method utilized for detection of integron class 1 and 2 with intI1 and intI2 specific primers.

**Results:** Analysis of the antimicrobial susceptibility pattern of isolates revealed that 48%, 50%, 45%, 17%, 24%, 10%, 25% of isolates resistance to cefotaxim, ceftazidime, Trimethoprime-sulfomethoxazole, Amikacin, Gentamicin, Imipenem and Amoxicillin-Clavulanic acid respectively. Using the PCR method for the detection of integrons class I and II showed that 47% and 44% of isolates having a positive result for the presence of class I and Class II integrons. 44% of isolates carried both of classes.

**Conclusion:** Obtained results from this study showed that more than forty percentages of isolates carried integron class I and II. Consist with previous studies there was a significant association between resistance antibiotic phenotypes and existence of integrons among isolates.

**Keywords:** Class I integron, Class II integron, Klebsiella pneumoniae, Urinary tract infection, PCR

# P99 - 530: ISOLATION AND IDENTIFICATION OF MARINE ACTINOBACTERIA EXTRACTS FOR ANTI-BIOFILM ACTIVITY AGAINST STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Formation of highly resistant microbial communities to antimicrobials associate with high rates of morbidity and mortality in hospitalized patients and generates serious consequences for therapy and severely complicates treatment options. An estimated 75% of bacterial infections involve biofilms that are protected by an extracellular matrix. Staphylococcus aureus is a major human pathogen that causes a wide range of clinical infections leading bacteremia and infective endocarditis as well as osteoarticular, pleuropulmonary and device-related infections. Marine actinobacteria hold a prominent position as the most economically and biotechnologically outstanding resource of potent compounds with wide range of activities

**Methods:** In the present study, after isolation of 30 actinobacteria from Caspian Sea and Persian Gulf, their fermentation broth ethyl acetate extracts were investigated for anti-biofilm activity using Microtiter plate assay against highly resistant Staphylococcus aureus UTMC 2519 isolated from clinical samples. The extracts with higher anti-biofilm activity compared to Rifampicin and Ciprofloxacin at concentration of 5$\mu$g/ml were selected for further analysis including cytotoxic activity and molecular identification based on sequence of 16S rRNA gene.

**Results:** The results indicate that crude extract of strain FA103 at concentration of 50$\mu$g/ml showed anti-biofilm activity against biofilm forming bacteria of strain UTMC 2519. The premier extract had no mortality at maximum tested concentration (100$\mu$g/ml) according to Brine shrimp lethality assay. The 16S rRNA sequence of strain FA103 showed 99.85% similarity with Streptomyces plumbiresistens. The Strain was deposited to University of Tehran Microorganisms Collection under the accession number of UTMC 1312.

**Conclusion:** Purified extract could be introduced as a potential anti-biofilm agent.

**Keywords:** Staphylococcus aureus, Marine actinobacteria metabolites, Anti-biofilm assay

# P100 - 532: DETECTION OF ANTIBIOTIC RESISTANCE GENES IN PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS ADMITTED TO AZAD UNIVERSITY TEACHING HOSPITALS, TEHRAN, IRAN.

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic pathogen that causes serious and sometimes life-threatening diseases in immunocompromised patients. The antibiotic treatment of P. aeruginosa infections is limited due to the extensive inherent and acquired antibiotic resistance. Broad-spectrum beta lactamase enzymes are known as an important cause of the emergence of P.aeruginosa drug-resistant isolates. Resistance due to the production of these enzymes in Pseudomonas is rising. The current study aimed to determine the prevalence and antibiotic resistance patterns in p. aeruginosa isolated from clinical specimen in Azad University Teaching Hospitals, Tehran, Iran.

**Methods:** Totally, 100 P. aeruginosa isolates were collected from different clinical samples. Species` identification was performed using standard biochemical tests. ESBL production was confirmed by phenotypic combined disk method as recommended by the Clinical and Laboratory Standards Institute (CLSI). PCR and sequencing were performed for detection of blaTEM, bla PDC, KPC and blaOXA-10 genes using specific primers.

**Results:** Resistance rate to antibiotics was high: streptomycin (100%), cephalexin (100%), trimethoprim-sulfamethoxazole (100%), tetracycline (79%), ciprofloxacin (40%), gentamicin (57%), ceftriaxone (35%), piperacillin (16%), ceftazidime (6%) and imipenem (5%). In total, 34(34%) of ESBL-producing isolates were positive for the presence of bla-PDC genes. bla-TEM and blaOXA-10 were detected in 30% and KPC genes were not detected in this study.

**Conclusion:** The prevalence of ESBLs producing P. aeruginosa strains is a major concern and highlights the need of infection control measures including prompt identification of beta lactamase producing isolates and antibacterial management.

**Keywords:** P. aeruginosa, ESBL, Antibiotic resistance patterns

# P101 - 551: ANTIBIOTIC RESISTANCE ACINETOBACTER ISOLATED FROM PATIENTS ICU AT BAHONAR IN KERMAN AND BIOFILM FORMATION IN THEM

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**Background and Aim:** Acinetobacters are opportunistic pathogens that are abundantly found in the environment. Their unique ability in the long-term survival in the hospital environment increases chances of patients infection caused by this bacteria. The aim of this study was to evaluate the antibiotic resistance of the isolated Acinetobacter spp. from ICU patients of Kerman shahid Bahonar Hospital.

**Methods:** After sampling for isolation Acinetobacter spp. were used biochemical methods and antibiogram was determined by 10 antibiotics by using Disk difusion method. Also minimum inhibitory concentration by two antibiotics ( gentamicin and colistin) was done with agar dilution method. Cell surface hydrophobicity(CSH) was exmined with Xylene on isolated Acinetobacter spp. . Biofilm formtion on glass, plastic and respiratory catheter surfaces were perfromed by selected Acinetobacter spp.

**Results:** The results of this study showed that 20 Acinetobacter spp. were separated from 70 samples. Antiobiogam test indicated sensitivity of the Acinetobacter spp. to colistin for 90% and to gentamicin 10% and the results of minimum inhibitory concentration by colistin was 32mg/ml. 3 samples above 60% and 1 sample below 30% were examined for biofilm test on glass, plastic and catheter surfaces. The results showed that biofilm formation in the plastic tube was more than glass tube and in the shaking condition was formed more biofilm. Treatment of cultures with colistin antibiotic significantly reduce the adhision ability of selected isolates.

**Conclusion:** Observing hygiene and using appropriate instruments for preventing from infection and biofilm formation in hospitals should be noticed.

**Keywords:** Acinetobacter, antibiotic resistance, biofilm, respiratory catheter

# P102 - 562: DETERMINING THE PATTERN OF ANTIBIOTIC RESISTANCE OF STAPHYLOCOCCUS AUREUS STRAINS IN SAMPLES OF TABRIZ HOSPITAL

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**Background and Aim:** Staphylococcus aureus (s. aureus) is one of the important pathogens in nosocomial infections and out-patient infections. The purpose of this study is to determining the pattern of antibiotic resistance to proper treatment of infection by methicillin-resistant staphylococcus aureus (MRSA) strains.

**Methods:** In this study, antibiotic-resistant strains of s. aureus 256 isolated from various clinical samples with method of DAD, minimum inhibitory concentration (MIC) and PCR been investigated.

**Results:** In dad method, (160.338) 47% of s. aureus strains were resistant to oxacillin and the least resistance to vancomycin (20.338) was 6%. In PCR method ( 162.338) 48% of strains were contained the gene mec A. Oxacillin MIC in 93% of the strains was more than 256 µg per ml. MRSA strains were highly resistant to antibiotics gentamicin (40/5%), erythromycin (40%) and ciprofloxacin (38%) but MRSA strains were more resistant to antibiotics vancomycin (5%) and erythromycin (3.5%).

**Conclusion:** Choosing the correct antibiotic to correct treatment of s. aureus infections and prevent the development of resistance to effective antibiotics against strains of s. aureus is great important.

**Keywords:** antibiotic, resistance, staphylococcus aureus

# P103 - 566: DETERMINING THE PATTERN OF ANTIBIOTIC RESISTANCE OF SHIGELLA SPECIES IN PATIENTS WITH ACUTE DIARRHEA IN TABRIZ

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**Background and Aim:** The aim of this study was to determine the species of shigella and investigation of their antibiotic resistance pattern in patients with acute diarrhea.

**Methods:** Children with acute diarrhea, which in recent years had referred to Tabriz pediatric hospital and their stool cultures were positive for shigella species and in terms of antibiotic sensitivity were examined.

**Results:** In 43 patients a stool culture positive for shigella, shigella flexneri in 39 cases and 4 cases of shigella sonnei was isolated. There was resistance to ampicillin and co-trimoxazole in s.flexneri at 4 and 5 percent, respectively and multidrug resistance was seen in 9% of cases. All cases were sensitive to third generation cephalosporins and nalidixic acid and the sensitivity to gentamicin, amikacin and chloramphenicol was 89.8%, 82.5% and 69%, respectively. Every 4 cases of shigella sonnei resistant to co-trimoxazole and only in one case there was sensitivity to ampicillin.

**Conclusion:** The most common species in this area, is s.flexneri that show high resistance to common drugs (ampicillin, co-trimoxazole), so it's better avoided unnecessary use of antibiotics in diarrhea in children to prevent the development of multi-drug resistance over the extent that there are now.

**Keywords:** Antibiotic resistance, shigella species, acute diarrhea

# P104 - 571: ANTIBIOTIC RESISTANCE PATTERN OF ESCHERICHIA COLI CAUSE URINARY TRACT INFECTIONS

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**Background and Aim:** This study aimed to determine the prevalence of resistance among Escherichia coli cause urinary tract infection than antibiotics in the city of Tabriz in order to obtain information for practical and patient treatment.

**Methods:** E.coli positive urine cultures to detect a pathogen using minimum inhibiting concentration disk in terms of antibiotic resistance were examined.

**Results:** Gentamicin least effect on E. coli with resistance 72/1 percent has shown. Among the drugs more resistance to cotrimoxazole, and rifampin at a rate of 4% to 6% among injectable drugs gentamicin resistance was highest. 4% of cases were resistance to two or mote drugs. Most antibiotic- resistant composition was related to cotrimoxazole, rifampin and cotrimoxazole and gentamicin as well as.

**Conclusion:** Empirical treatment with gentamicin and cotrimoxazole is not appropriate in most patients with urinary tract infection but a large percentage of patients were treated with ciprofloxacin or nalidixic acid orally and with amikacin for injection.

**Keywords:** Antibiotic, resistance, Escherichia coli

# P105 - 577: EMERGENCE OF A MULTI-DRUG RESISTANT CLOSTRIDIUM DIFFICILE IN TEHRAN

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**Background and Aim:** Clostridium difficile, an anaerobic bacterium, is the leading cause of diarrhea and pseudomembraneous colitis. This organism is frequently associated with excessive use of antibiotics. Resistance in C. difficile strains against metronidazole and vancomycin as two antibiotics of choice have been reported to be uncommon. Here, we detected a multidrug-resistant C. difficile in Tehran.

**Methods:** The 46 isolates were subjected to PCR for tcdA and tcdB. The antibiotic susceptibility test was carried out towards vancomycin, imipenem, cefotaxime, clindamycin, ceftriaxone, ertapenem, levofloxacin, metronidazole, moxifloxacin, tetracycline, piperacillin/tazobactam and ampicillin using disk diffusion. Minimum inhibitory concentration (MICs) was also determined for metronidazole, vancomycin, moxifloxacin, ciprofloxacin and tetracycline using MIC strip test (Liofilchem, Italy). The vancomycin-resistance encoding gene, vanA, was detected via PCR.

**Results:** We found 1 isolate that was resistant to all of the selected antibiotics by two methods. The isolate was positive for tcdA and tcdB, indicating a toxigenic C. difficile. PCR for vanA gene yielded an amplicon of 1030 base pair.

**Conclusion:** Vancomycin and metronidazole have been prescribed as first-line therapy for patients suffering from C. difficile infection. However, by emergence of resistance toward these antibiotic, urgent measures are needed to trigger an appropriate antimicrobial stewardship and to slow down the dissemination of such isolates.

**Keywords:** Multi-drug resistance, Clostridium difficile, vanA

# P106 - 581: ISOLATION OF STAPHYLOPHAGE WHICH LYSES METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Staphylococcus aureus is a common cause of skin, respiratory system infections and food poisoning. Nowaday, S. aureus has become resistant to many commonly used antibiotics so alternative treatment such as phage-therapy may be useful especially in hospital acquired infections. Bacteriophages are viruses that lyse bacteria. The aim of this study is isolation of staphylophage which lyse methicillin resistant S. aureus isolated from human cases.

**Methods:** In this study, 13 isolates of S. aureus were collected from Isfahan hospitals laboratories. The staphylophages were isolated from sewage by filtration and enrichment in S. aureus overnight culture. Detection and enumeration of Bacteriophages had done by double agar overlay plaque assay. Finally, identification of staphylophage was prepared by TEM electron microscopy images.

**Results:** All of thirteen S. aureus isolates were resistant to methicillin. Isolated Staphylophage could lyse all of 13 isolates of methicillin resistant S. aureus.Looks like it belongs to the Siphoviridae. Siphoviridae is a family of double-stranded DNA viruses in the order Caudovirales.

**Conclusion:** This Staphylophage could lyse all of methicillin resistant S. aureus isolates in culture media. Therefore, this phage can be considered as a potentially effective agent in the treatment of staphylococcal infections, but needs to confirm by animal and human clinical practice evaluation.

**Keywords:** Staphylococcus aureus, Bacteriophage, Infection

# P107 - 590: PREVALENCE OF ANTIBIOTIC RESISTANCE PATTERNS AND INCIDENCE OF BROAD SPECTRUM BETA LACTAMASES IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII IN TEHRAN, IRAN

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**Background and Aim:** Acinetobacter baumannii is one of the most frequent pathogens in the modern healthcare system. It is frequently resistant to multiple classes of antibiotics such as β-lactams family, mainly by having β-lactamase enzymes. Therefore, treatment of its infections is becoming a serious clinical concern and there is need to know antibiotic resistance patterns of A. baumannii in clinical isolates.

**Methods:** In this study 70 A. baumannii isolates were collected from Imam Khomeini hospital in Tehran, Iran. Antibiotic susceptibility tests were performed by disc diffusion method according to CLSI guidelines. The frequency of MBL (metallo- β -lactamase) and ESBL (extended spectrum- β -lactamase) producers were evaluated by CDDT (Combined disk diffusion test). The blaTEM1, blaIMP4 and oxa23 genes were detected by PCR.

**Results:** The resistance of A. baumannii isolates to the tested antibiotics were as follow: 70 (100%) to ciprofloxacin, 68 (97.1%) to cefotaxime, 64 (91.4%) to cefteriaxone, 68 (97.1%) to imipenem, 67 (95.7%) to gentamicin, 68 (97.1%) to amikacin, 70 (100%) to rifampicin, 70 (100%) to piperacillin/tazobactam, 0 (0%) to polymixinB, 64 (91.4%) to ampicillin/sulbactam, 70 (100%) to ticarcillin/clavulanate and 51 (72.8%) to tetracycline. The prevalence of blaTEM-1 and oxa23 genes among 56 of ESBL-producing A. baumannii isolates were 53(94%) and 56(100%), respectively. The prevalence of imp-4 gene among metallo ?-lactamase-producing A. baumannii isolates was 6 of 50 (12%).

**Conclusion:** The prevalence of ESBLs producing A. baumannii strains is a major concern and highlights the need of infection control monitoring including prompt identification of -lactamase-producing isolates and antibacterial management.

**Keywords:** Acinetobacter baumannii; Extended-Spectrum-Beta Lactamases (ESBLs); Antibiotic resistance patterns

# P108 - 591: PREVALENCE AND ANTIBIOTIC RESISTANCE PATTERNS OF BACTERIAL ISOLATES FROM POSITIVE BLOOD CULTURE OF HOSPITALIZED PATIENTS IN SHARIATI HOSPITAL, TEHRAN.

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**Background and Aim:** Bloodstream infections are important causes of morbidity and mortality in hospitalized patients. Blood cultures play important role in identifying most of bacterial agents of blood stream infections. Moreover, antibiotic resistance is one of the major challenges faced by physicians in treating bacterial blood stream infections. Therefore, this study was aimed at determining the prevalence and antibiotic resistant patterns of microbial isolates from hospitalized patient's blood cultured samples in the Shariati Hospital, Tehran.

**Methods:** This research was a descriptive, retrospective and hospital based study, done on data recorded in software of Shariati hospital laboratory of bacterial isolates from positive blood cultures during the second half of 1392. The prevalence of bacterial isolates and their respective antibiotic resistance patterns was determined following antibiotic susceptibility testing using disk diffusion method.

**Results:** Of 595 Positive blood cultures, the frequency of bacterial isolates was determined as follows: 41% Pseudomonas, 20% Staphylococcus epidermidis, 10% Escherichia coli, 6% Acenitobacter lwoffii, 6% Staphylococcus aureus, 5% Stenotrophomonas, 3% Acenitobacter baumannii. The antibiogram showed that 96.2% of Acinetobacter lwoffii was resistant to imipenem, while 92.8% of Acenitobacter baumannii and 66% of Pseudomonas aeruginosa was resistant to piperacillin respectively. About 85.7% f Staphylococcus epidermidis and 65% of Staphylococcus aureus was resiatant to erythromycin respectively. Others include 75% of Klebsiella resistant to ciprofloxacin, 73.7% of Escherichia coli resistant to trimethoprim-sulfamethoxazole and 50% of Stenotrophomonas to ceftazidime.

**Conclusion:** High level of antibiotic resistance recorded among different bacterial blood isolates showed the need for blood cultures and susceptibility testing before commencement of antibiotic therapy in this center.

**Keywords:** Blood culture, Drug resistance, Bacteraemia, Septicemia

# P109 - 593: SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL ACTIVITY OF FUNCTIONALIZATION ZNO NANOPARTICLES BY THIOSEMICARBAZONE (ZNO/TSCS) AGAINST STAPHYLOCOCCUS AUREUS NOSOCOMIAL PATHOGENIC BACTERIUM

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**Background and Aim:** Antibacterial activity of zinc oxide nanoparticles (ZnO-NPs) has received significant interest worldwide particularly by the implementation of nanotechnology to synthesize particles in the nano-scale region. Therefore, in this study, we describe successful synthesis and chemical conjugation of a thiosemicarbazones with ZnO NPs and its application against drug resistant bacteria.

**Methods:** The ZnO NPs synthesis by precipitation method. The chemical conjugation of an thiosemicarbazon with ZnO NPs was performed by HOOC-CH(NH2)-(CH2)2-COOH (Glutamic acid) via co-condensation reaction. Ciprofloxacin-resistant methicillin-resistant Staphylococcus aureus strains were isolated from clinical samples and identified, and their susceptibility was determined by the minimum inhibitory concentration (MIC) a micro-dilution and combined effect method.

**Results:** The antibacterial activity of ZnO/TSCs against isolated pathogenic bacteria was evaluated by MIC and combined effect test. The MIC value of ZnO/TSCs NPs against Ciprofloxacin-resistant methicillin-resistant S. aureus was observed 100, 64µg/mL respectively. The successful synthesis and characterization of ZnO NPs functionalized by thiosemicarbazones (ZnO/TSCs) in the precipitation method was evaluated by TEM images and estimated to be ~100±25 nm. Also, the samples obtained were analyzed by UV–vis spectrophotometer, FTIR, and EDX, which all concur with the successful synthesis of ZnO and (ZnO/TSCs) nanoparticles as well as.

**Conclusion:** Here, for the first time, we report that antibacterial activity of functionalization ZnO nanoparticles by Thiosemicarbazone (ZnO/TSCs) against several clinical test strains S. aureus, improves in presence of ZnO/TSCs nanoparticles. Because of its potential synergistic effect with antibiotics, ZnO/TSCs nanoparticles may be considered as a valuable adjuvant in combination therapy of ciprofloxacin or other antibiotics.

**Keywords:** Conjugation, Precipitation method, Functionalized, Combined effect

# P110 - 611: FREQUENCY OF AMP-C GENE IN STRAINS OF PSEUDOMONAS AERUGINOSA ISOLATED FROM WOUND

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**Background and Aim:** Pseudomonas aeruginosa recently became as one of the most commonly microorganisms isolated from wound infections. Unfortunately, antibiotic resistance has become increasingly as a pressing clinical issue in many countries. Thus resistant Pseudomonas aeruginosa is a major concern in medical practice.

**Methods:** For identifying antibiotic resistance, wound samples have been collected from patients with burning at 2 burning hospitals in Tehran. To detect 60 P. aeruginosa bacteria, by identifying isolated species using gram stain and biochemical tests. In vitro susceptibility of 60 P.aeruginosa isolates to 8 antimicrobial agents colistin, amoxicillin, ceftriaxone, cefixime, cephalexin, ciprofloxacin, amikacin, and imipenem was performed by Kirby-Bauer's Disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI, 2016) guideline. PCR method was used to identify AMP-C Gene in 60 P. aeruginosa strains.

**Results:** PCR and sequence analysis showed that 3 (0.05%) isolates produced AMP-C Gene. In vitro susceptibility test showed that all of strains were resistant to amoxicillin. The rates of resistance to the majority of tested antibiotics varied among 51% to 100 %, with the exception of colistin (20 %) Our results showed that the frequency of AMP-C Gene was not high in patients.

**Conclusion:** It is very important to prevent dissemination of resistant isolates in health care settings.

**Keywords:** AMP-C Gene, wound infection, antimicrobial resistance, Pseudomonas aeruginosa

# P111 - 615: IN VITRO INHIBITORY EFFECT OF ALCOHOLIC EXTRACT OF VACCINIUM ARCTOSTAPHYLOS ON MULTIDRUG RESISTANCE KLEBSIELLA STRAINS ISOLATED FROM CLINICAL SPECIMENS IN KARAJ

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**Background and Aim:** Selection of antibiotics for urinary tract infections (UTIs) has become more challenging because of the increasing rates of multidrug-resistant Enterobacteriaceae (MDRE) infections. Plants with potential medicinal activity have recently come to the attention of Western scientists, and studies have reported that some are bioactive. This study aimed to evaluate the antibacterial effect of ethanol and aqueous extracts of Vaccinium arctostaphylos fruit against MDR Klebsiella strains isolated from urine specimens.

**Methods:** This study was performed on 78 clinical Klebsiella isolates. Antimicrobial susceptibility was performed using Kirby-Bauer disk diffusion method against common antibiotics. MICs of ethanol extracts of Vaccinium arctostaphylos were determined using sterile 2ml 96-well plates. The tested dilutions ranged from 3000 to 11.7 µg/µL. MBC was determined by subculturing on Muller Hinton agar plates and incubating at 37°C for 18h.

**Results:** Isolates showed the highest resistance to amoxicillin (62.28%). Ceftizoxime by highest susceptibility was the most effective drug in vitro. Nine isolates (11.5%) were resistant to more than two antibiotic classes and the frequency of multi drug resistance (MDR) to 12 antibiotics was 1.3 % (1). Five strains of MDR isolates were tested for MIC values and ethanol extracts of Vaccinium arctostaphylos showed antibacterial activity with MIC and MBC values of 750 ?g/ µL and 1500 ?g/ µL respectively.

**Conclusion:** Ethanol extracts of Vaccinium arctostaphylos fruit had inhibitory activity against MDR klebsiella strains which were resistance to common antibiotics. The presence of antibacterial activity could be confirmed in most plant species used in traditional medicine in Iran.

**Keywords:** Antibacterial activity, klebsiella, Vaccinium arctostaphylos

# P112 - 616: A PAN DRUG-RESISTANT PATIENTS WITH INTRAVENTRICULAR EXTENSION OF HEMORRHAGE (IVH): A CASE REPORT IN BESAT HOSPITAL, SANANDAJ, IRAN

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**Background and Aim:** Intraventricular hemorrhage (IVH), is a bleeding into the brain's ventricular system. This had highest morbidity of any stroke subtype. In other hand, pandrug-resistant (PDR) bacteria are bacteria defined as non-susceptibility to all agents in all antimicrobial categories. In this study we report a case of PDR patients to bacteria isolated from his.

**Methods:** Patient, A 46-year-old woman, HIV-negative, referred to Besat hospital, Kurdistan province, Sanandaj, Iran. She was diagnosed with IVH in February 2017. After hospitalization in Intensive Care Unit (ICU), a culture of tracheal intubation sample performed on his. After culture and incubation in 37 C0, laboratory microbial and biochemical test also were applied for bacteria diagnosed that isolated from tracheal intubation. In other hand before treatment with different antibiotic, disc diffusion method was applied for antibiogram and antibiotic resistance pattern.

**Results:** Results from culture showed Pseudomonas aeruginosa, Staphylococcus aureus and Escherichia coli that isolated from tracheal intubation. Antibiogram test showed P. aeruginosa was resistance to all antibiotics; Cefazolin, Ofloxacin, Piperacillin, Ceftazidime, Ceftriaxone. S. aureus was resistance to all antibiotics; Ciprofloxacin, Ampicillin, Ciprofloxacin, Cefoxitin, Erythromycin, Vancomycin, Tetracycline, Linezonomycin. E. coli also was resistance to all antibiotics; Tetracycline, Kanamycin, Ampicillin/sulbactam.

**Conclusion:** Patients in this study had resistant to all antibiotic that examine on bacteria that isolate from his. In end, with respect to all treatment that performed on his, she does not respond to treatments. Also physician stopped hoping for him. Patient The patient was discharged from the hospital returns home in coma condition.

**Keywords:** Pan Drug-Resistant, Intraventricular extension of hemorrhage, Case Report

# P113 - 617: IN VITRO INHIBITORY EFFECT OF ALCOHOLIC AND AQUEOUS VACCINIUM EXTRACTS ON AMPC BETA-LACTAMASE PRODUCING ESCHERICHIA COLI STRAINS ISOLATED FROM CLINICAL SPECIMENS IN KARAJ

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**Background and Aim:** Urinary tract infections (UTIs) is the most common bacterial infections in human and is associated with significant morbidity and health care costs. The expense for the use of traditional medicine is growing exponentially in many parts of the world.This study aimed to evaluate the antibacterial effect of ethanol and aqueous extracts of Vaccinium arctostaphylos (Qare qat in Persian) and Vaccinium macrocarpon (American cranberry) against the major responsible of UTIs, Escherichia coli.

**Methods:** In the present study, after preparation of ethanol and aqueous extracts of Vaccinium arctostaphylos and Vaccinium macrocarpon by maceration method, antimicrobial effects of the extracts were evaluated by agar diffusion method against five Escherichia coli strains which isolated from clinical specimens in Karaj and confirmd as AmpC beta-lactamase producer by phenotypic combined disc test (CDT). Minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) were determined by micro-dilution method.

**Results:** All of the studied strains were sensitive to the ethanol extracts of Vaccinium arctostaphylos and Vaccinium macrocarpon. The mean zones of inhibition were obtained in ranging from 9 to 25 mm. MIC and MBC determination of alcoholic and aqueous extracts of Vaccinium arctostaphylos and Vaccinium macrocarpon showed that alcoholic extract of Vaccinium macrocarpon (American cranberry) has more antibacterial effect on tested strains.

**Conclusion:** Alcoholic and aqueous extracts of Vaccinium arctostaphylos and Vaccinium macrocarpon had inhibitory activity against AmpC beta-lactamase producing Escherichia coli strains. More inhibitory effect of Vaccinium macrocarpon can be due to different amounts of flavonoid and phenolic compounds between the two species.

**Keywords:** Vaccinium arctostaphylos, Vaccinium macrocarpon, UTIs

# P114 - 624: THE PREVALENCE OF MEX E,MEX F GENES AMONG MULTI –DRUG RESISTANCE PSEUDOMONAS AERUGINOSA ISOLATES

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**Background and Aim:** Pseudomonas aeruginosa recognized as major cause of infections in hospitalized patients or patients with impaired defenses. Selection of antibiotics for its treatment is difficult by increasing resistance of P. aeruginosa to antibiotics that occur Multi Drug Resistance (MDR). The mechanism of intrinsic antibiotic resistance is expression of multidrug resistance efflux pumps. The genome of P. aeruginosa codes for numerous efflux pumps, among which MexAB-OprM and MexXY-oprM are the most importance due to their large prevalence in clinical strains and their ability to expel several classes of antibiotics. The aim of this study was evaluate the frequency of mex E,mex F in MDR P. aeruginosa isolates

**Methods:** 50 strains of Pseudomonas aeruginosa were isolated from clinical specimens of patients were admitted to Milad hospital and diagnosed by biochemical tests. Antibiotic susceptibility of isolates was determined by disc diffusion method. After determining the MDR isolates, the presence of genes were evaluated by Multiplex PCR

**Results:** 17(34%) MDR strains of P. aeruginosa that were resistant to more than two classes of antibiotics were detected. The frequency of mexE and MexF genes among MDR isolates was 100% and 94% respectively but in non MDR isolates it was both 96%

**Conclusion:** The results showed that the both genes had highest frequency among MDR and non MDR isolates. It is demonstrated that intrinsic resistance of Pseudomonas aeruginosa to antibiotics is a result of high activity of efflux systems and carrying the efflux pump genes but for better study of efflux pumps genotypic expression of efflux pumps is required

**Keywords:** MexXY-oprM, Efflux pumps, P. aeruginosa , MDR

# P115 - 625: IN-VITRO EVALUATION OF THE ANTIMICROBIAL ACTIVITY OF AQUEOUS, HYDROALCOHOLIC AND ALCOHOLIC EXTRACTS OF LEAVES AND STEM OF DAPHNE MUCRONATA ON THE GROWTH OF ORAL BACTERIA

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**Background and Aim:** Plants are a source of potential anti-infective agents. Daphne mucronata is the herb of family Thymelaeaceae, which has the therapeutic effects. The aim of the present study was to evaluate the antimicrobial activity of aqueous, hydroalcoholic and alcoholic extracts of the leaves and stem of Daphne mucronata on the growth of oral bacteria.

**Methods:** In this study, the leaves and stem of Daphne mucronata were collected from the Zagros Mountains, Lorestan, Iran. They were air-dried under shade. Aqueous, hydroalcoholic and alcoholic extracts of the Daphne mucronata were extracted by using classic techniques for solvent extraction of the plant. The antimicrobial effects of agar Disk Diffusion Method (ADDM) and Minimum Inhibitory Concentration (MIC) were evaluated. The data were analyzed using Duncan's and ANOVA test.

**Results:** The results showed that the antimicrobial activity was dependent and the type of extract. The alcoholic extract of the Daphne mucronata had the most antibacterial activity and the highest effect on Streptococcus mutans, compared with other extracts. The aqueous extract of the plant had no effect on bacterial growth.

**Conclusion:** On the basis of the current result, the alcoholic extract of Daphne mucronata might be a good candidate in the research as a natural antimicrobial agent and as a medicine for the prevention and control of the growth of Streptococcus mutans.

**Keywords:** Agar Disk Diffusion Method, Minimum Inhibitory Concentration, Daphne mucronata, Thymelaeaceae, Antimicrobial activity

# P116 - 629: EVALUATION OF ANTIBACTERIAL ACTIVITY OF SOME NEWLY SYNTHESIZED DERIVATIVES OF PYRANOPYRAZOLE, PYRAZOLO[1,2-B]PHTALAZINE AND BIS-PYRAZOLE

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**Background and Aim:** Considering the overuse of antibiotics, the problem of antibiotic resistance has been very problematic in recent years In this regard, synthesized derivatives compounds have been introduced as a superseded source for new drugs. In this study, the antibacterial effects of newly synthesized derivatives of pyranopyrazole, pyrazolo[1,2-b]phtalazine and bis-pyrazole against Bacillus cereus, Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus and Enterococcus faecalis were examined.

**Methods:** Their antibiotic effects are quantized by the use of the both disk diffusion and minimum inhibitory concentration (MIC) methods. The antibacterial effects of the compounds that produced ≥ 8mm zone of inhibition were tested quantitatively by Micro broth dilution method for determination of MIC value that were defined as lowest concentration of compound for inhibition growth of tested bacteria. In this method, concentration of 512, 256, 128, 64, 32, 16, 8 µg/mL were used for all bacteria in per disc and incubated the same conditions.

**Results:** According to the results, the minimum inhibitory concentration of the compounds defined as c and d against S.aureus is 64 (?g/ml). It is found that the synthesized compounds are only effective against S. aureus.

**Conclusion:** In conclusion, the comparison of the maximum zone of inhibition and MICs between the present study and those in literature shows the privilege of using compound c and d against S. aureus. Further studies for the application of these compounds in vivo should be performed.

**Keywords:** Antibacterial activity; Antibiotic resistance; Maximum zone of inhibition; Minimum inhibitory concentration (MIC); Isatin

# P117 - 632: IN-VITRO EVALUATION OF THE ANTIMICROBIAL ACTIVITY OF AQUEOUS, HYDROALCOHOLIC AND ALCOHOLIC EXTRACTS OF LEAVES AND STEM OF DAPHNE MUCRONATA ON THE GROWTH OF ORAL BACTERIA

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**Background and Aim:** Plants are a source of potential anti-infective agents. Daphne mucronata is the herb of family Thymelaeaceae, which has the therapeutic effects. The aim of the present study was to evaluate the antimicrobial activity of aqueous, hydroalcoholic and alcoholic extracts of the leaves and stem of Daphne mucronata on the growth of oral bacteria.

**Methods:** In this study, the leaves and stem of Daphne mucronata were collected from the Zagros Mountains, Lorestan, Iran. They were air-dried under shade. Aqueous, hydroalcoholic and alcoholic extracts of the Daphne mucronata were extracted by using classic techniques for solvent extraction of the plant. The antimicrobial effects of agar Disk Diffusion Method (ADDM) and Minimum Inhibitory Concentration (MIC) were evaluated. The data were analyzed using Duncan's and ANOVA test.

**Results:** The results showed that the antimicrobial activity was dependent and the type of extract. The alcoholic extract of the Daphne mucronata had the most antibacterial activity and the highest effect on Streptococcus mutans, compared with other extracts. The aqueous extract of the plant had no effect on bacterial growth.

**Conclusion:** On the basis of the current result, the alcoholic extract of Daphne mucronata might be a good candidate in the research as a natural antimicrobial agent and as a medicine for the prevention and control of the growth of S. mutans.

**Keywords:** Agar Disk Diffusion Method, Minimum Inhibitory Concentration, Daphne mucronata, Thymelaeaceae, Antimicrobial activity

# P118 - 636: STUDY ANTIMICROBIAL ACTIVITY OF DIFFERENT EXTRACTS OF DAPHNE OLEOIDES ON AEROBIC BACTERIA CAUSING ORAL INFECTION

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**Background and Aim:** Oral infections are a big problem but bacteria are pathogens in these infections treatment of these infections with antibiotics unwanted complications such as drug resistance leads. One of the most common diseases of human being is dental caries with are caused by many factors, such as bacteria. A between the bacteria Streptococcus mutans play the major role in causing dental caries.

**Methods:** This study investigated antimicrobial effect of ethanol hydroalcholic and aqueous extract of Daphne oleoides oral aerobic bacteria include gram positive strain such as Staphylococcus aureus, Stereptococcus mutans and Staphylococcus, gram negative such as Pseudomonas aeroginosa and Neisseria sicca in vitro were performed. The parts of the Daphne oleoides leaves and stem were collected .The were dried in the shade, powdered using for exterct. The exteraction was carried out using three solvent such as ethanol, hydroalcholic and aqueous .The antimicrobial activity was studied using disc diffusion, well diffusion and MIC (minimum inhibitory concentration) method.

**Results:** The results of this study showed the ethanol exteract highest antimicrobial activity against bacteria. Also ethanol exteract is more active antimicrobial against S. mutans bacteria inhibithion zone diameter 17mm and in concentration 1/56mg/ml and less potent antimicrobial activity against Staphylococcus epidermidis inhibiton zone diameter 6mm and with concenteration 12/5mg/ml showed.

**Conclusion:** Extracts evaluated in this study shawed different antimicrobial active against all tested bacteria.

**Keywords:** Daphne oleoides, well diffusion, disc diffusion, MIC, Antimicrobial activity

# P119 - 642: STUDY EFFECT ANTIMICROBIAL OF AQUEOUS AND ALCOHOLIC EXTRACT PORTULACA OLERACEA ON BACTERIA ESCHERICHIA COLI, PSEUDOMONAS AEROGINOSA, STAPHYLOCOCCUS AUREUS, KLEBSIELLA PNEUMONIA, ENTEROBACTER AERUGINOS.

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**Background and Aim:** One of the major diseases that human beings have been dealing with is microbial disease. microbial resistance to antibiotics is one of the most important issues that is rising in the treatment of infectious diseases. The use of plant in Iran dates back to the history of this Land and the medical uses of plants are Long lived. The purpose of this study was to Investigate the antibacterial effects of aqueous and alcoholic extract of portulaca oleracea Plant on standard bacteria Escherichia coli, Pseudomonos aeroginosa, staphylococcus aureus, klebsiella Pneumonia, Enterobacter aeruginos and extraction of the active substance (apigenin) of this Plant.

**Methods:** In this experiment study of Portulaca oleracea was used to evaluate the antimicrobial effect. this basis was used to determine antibacterial Properties of antibiogram method against 5 standard bacteria. Also, the amount of active ingredient onther basis of HPLC was measured.

**Results:** There was no growth inhibition for any of the bacteria. this means that the Portulaca oleracea that collected from the area did not have antibacterial effect. then by measuring the effective ingredient (apigenin), the results were that this extraordinary amount was more than standard.

**Conclusion:** The results of this study effects of Portulaca oleracea aqueous and alcoholic extracts on the growth of standard bacteria showed that the inhibition Zones was not created in any of the Concentration of aqueous and alcoholic extracts.Because harvested Portulaca oleracea in this region has on antibacterial active ingredient higher than standard.

**Keywords:** Portulaca oleracea extract, antibacterial, apigenin, cytotoxic effect

# P120 - 644: MUTATIONAL ANALYSIS OF RNA POLYMERASE B SUBUNIT IN VARIOUS ESCHERICHIA COLI STRAINS RESISTANT TO RIFAMPIN AND CIPROfIOXACIN

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**Background and Aim:** Fluoroquinolone antibiotics such as ciprofloxacin are effective agents against Gram-negative bacteria such as Escherichia coli. In Escherichia coli exposure to ciprofloxacin resulted in mutagenesis and antibiotic resistance. In addition, exposure to UV radiation induces the transcription of umuC by ciprofloxacin. UmuC, a subunit of the PolV is required for mutagenesis caused by UV rays. Previous studies showed that in Streptococcus uberis exposure to the ciprofloxacin will lead to mutagenesis and antibiotic resistance. However, UmuC is not essential for this process. In another study it was found that in the Escherichia coli ciprofloxacin resistant mutants the expression of recA, umuC genes increased. In a previous study also found that in Escherichia coli clones with low and medium resistance can be produced from UmuC- mutant and UmuC is required to create mutants with high resistance and plays a role in the mutagenesis. The aim of this study was to study the part of the β subunit of RNA polymerase, including region I in various strains resistant to rifampin and ciprofloxacin of Escherichia coli.

**Methods:** For this purpose, the UmuC- mutants were used and this part of the β subunit of the RNAP was first amplified by PCR and then sequenced.

**Results:** The results showed that there is a mutation in this region that has not been previously reported.

**Conclusion:** In conclusion, these change may be associated with resistance to ciprofloxacin and at the same time, it shows the importance of these area in resistant to rifampin that is associated with resistant to ciprofloxacin phenotype.

**Keywords:**Ciprofloxacin, rifampin, Escherichia coli, RNA polymerase

# P121 - 645: THE MUTATION ASSAY IN UMUC– MUTANTS OF ESCHERICHIA COLI RESISTANCE TO CIPROFLOXACIN

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**Background and Aim:** Ciprofloxacin is a fluoroquinolone antibiotic have used to eliminate Gram-negative pathogenic bacteria such as Escherichia coli. In Escherichia coli exposure to ciprofloxacin resulted in mutagenesis and antibiotic resistance. In Escherichia coli replicative polymerase enzyme, that regulate SOS response are, PolIV and PolV, that worked together and are required for mutagenesis caused by ciprofloxacin. Previous studies showed that in Escherichia coli clones with low and medium resistance can be produced from UmuC- mutant and UmuC is required to create mutants with high resistance and plays a role in the mutagenesis. The aim of this study was to assay mutation frequency in UmuC- mutants of Escherichia coli resistant to ciprofloxacin.

**Methods:** For this purpose, the UmuC- mutants were used and the mutation frequency was determined in the presence of rifampin.

**Results:** The results showed that the mutation frequency is low.

**Conclusion:** In conclusion, the low frequency of mutation shows the cause of creation of mutants with low and medium resistance to ciprofloxacin. At the same time suggests that in the absence of UmuC, other factors might be effective, and need to be studied.

**Keywords:** Ciprofloxacin, Escherichia coli, SOS response, mutation assay

# P122 - 651: ANTIBACTERIAL ACTIVITY OF ARTEMISIA DRACUNCULUS ESSENTIAL OIL ON MULTIDRUG RESISTANT ESCHERICHIA COLI ISOLATED FROM FOODS

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**Background and Aim:** Currently, multi drug resistant (MDR) pathogens present a real problem in the world. The global emergence of increasing bacterial resistance due to indiscriminate use of antibiotics, is gradually elevated treatment costs, morbidity and mortality rates. The aim of this study was to determine the antibiotic resistance pattern in Escheichia coli isolated from ready to eat (RTE) foods and their sensitivity to Artemisia dracunculus essential oil.

**Methods:** The antibiotic resistance of 18 E.coli obtained isolates were determined by Kirby Bauer method. Also, susceptibility of the obtained isolates were evaluated by micro-dilution and agar disk diffusion methods to essential oil.

**Results:** All of the E. coli isolates were resistant to amoxicillin/clavulanic acid, ampicillin, nitrofurantoin, tetracycline, kanamycin and gentamycin. The main compounds of the Artemisia dracunculus essential oil were methyl chavicol (84.83%), trans-ocimene (3.86%) and z-β-ocimene (3.42%). The antibacterial activities of essential oil were shown against MDR E. coli. The Artemisia dracunculus essential oil exhibited antibacterial activity against E. coli isolated from RTE foods with MIC ranged between 14 to 900 µg/mL and zone of inhibition ranged between 3.00±1.00 to 7.00±1.00 mm.

**Conclusion:** Therefore, the above essential oil could be used as a potential source of natural antibacterial agents against MDR bacteria.

**Keywords:** Antibacterial activity, Drug resistance, Food, Essential oil

# P123 - 654: MINIMUM INHIBITORY CONCENTRATION OF ESSENTIAL OIL OF THREE THYMES ON ESCHERICHIA COLI STRAIN WITH INCREASED PUMP ACTIVITY

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**Background and Aim:** Increasing Multidrug resistance associated with extrusion pumps in the bacteria causing the herbs with pump inhibition activity again more attention. Thyme is one of the herbs that its oil has antimicrobial effects. The aim of this study was to determine MIC of three Iranian thyme oils on Escherichia coli strain with increased pump activity.

**Methods:** Thyme essential oil was extracted by hydrodistillation using Clevenger apparatus. MIC was determined by serial dilution method in broth (Muller Hinton broth). Different dilutions of essential oils (20-250 µl/ml) were prepared in dimethyl sulfoxide (4%).

**Results:** Results showed the MIC of three thyme samples for E. coli strain was similar and equal to 40 µl/ml.

**Conclusion:** In conclusion, Iranian thyme samples have antibacterial activity against E. coli strains with increased pump activity and can used in lower concentration with antibiotics for eradication of pathogenic bacteria.

**Keywords:** Essential oil of Thymus, MIC, Multidrug resistance, E.coli

# P124 - 655: SYNERGISTIC EFFECT OF GREEN TEA WITH ANTIFUNGAL DRUGS ON ASPERGILLUS SPECIES

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**Background and Aim:** The incidence of Aspergillosis has reached to its peak in the last two decades and has generally become to the deadliest opportunistic and saprophytic fungal infections, especially in immunocompromised patients. Today, drug resistence is a global problem and it has also been observed in Aspergillus species. The medicinal plants have the ability to solve this problem.

**Methods:** In this study, the effects of the aqueous and methanol extract of green tea and the synergistic effects of these two extracts was studied along with two drugs of itraconazole and voriconazole against four strains of Aspergillus including Aspergillus flavus ATCC39, Aspergillus niger ATCC9142 Aspergillus fumigatus ATCC278 and Aspergillus terreus ATCC274 accordaing to microdilution method to determine the minimum inhibitory concentration (MIC) and minimum fungicide concentration (MFC).

**Results:** Two strains of A.flavus ATCC39 and A.terreus ATCC274 are sensitive to itraconazole while two other strains were resistant. All four tested strains were resistant to voriconazole. The aqueous and methanol extracts of green tea did not show antifungal effect but synergistic effects of aqueous extract of green tea and itraconazole was worthwhile against A.niger ATCC9142 and A.fumigatus ATCC278. Also, the combined methanol extracts of green tea and itraconazole against A.niger ATCC9142 and the combined aqueous extracts of green tea and voriconazole against A.flavus ATCC39 and A.fumigatus ATCC278 were reported valuable.

**Conclusion:** The results of this study showed that there is a valuable synergistic effect between the tested antifungal drugs and the extracts.

**Keywords:** Aspergillus, Green tea, Itraconazole, Voriconazole, Antifungal, Drug resistance

# P125 - 656: ANTIBACTERIAL EFFICACY OF FE3O4-AG NANOPARTICLES BIOSYNTHESIS BY SCENEDESMUS OBLIQUUS ALGAE EXTRACT AND ITS EFFECT ON MULTIPLE DRUG-RESISTANT OF PSEUDOMONAS AERUGINOSA STRAINS

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**Background and Aim:** Increasing the antibiotic resistance of Pseudomonas aeruginosa has created many problems in treating patients. The advancement of nanotechnology in the last decade has provided opportunities for discovering the bacterial effect of metallic NPs. It is well documented that Fe3O4 nanoparticles are potent antimicrobial agents. In the present study, antibacterial efficacy of the Scenedesmus obliquus extract in biosynthesis of Fe3O4-Ag NPs and inhibitory effect of the biosynthesized (Fe3O4-Ag) SNPs on growth of Multiple Drug-Resistant of P. aeruginosa were investigated.

**Methods:** Ciprofloxacin-resistant P. aeruginosa strains were isolated from clinical samples and their susceptibility was determined by the disk diffusion assay and minimum inhibitory concentration (MIC) evaluated by broth micro-dilution method in presence ATCC 27853 strain. The synthesized Fe3O4-Ag nanoparticles by S. obliquus algae was evaluated by Transmission electron microscopy (TEM), UV–vis spectroscopy, FTIR, and Energy Dispersive Spectrometry (EDS).

**Results:** UV–Vis spectrum of reaction mixture showed strong absorption peak with centering at 400 nm. The FT-IR results imply that Fe3O4-Ag NPs were successfully synthesized in present Scenedesmus obliquus. Morphology of the biosynthesized Fe3O4-Ag NPs was revealed by TEM microscopy and estimated to be ~100±25 nm. Also, Energy-dispersive X-ray spectroscopy (EDS) study indicated a sharp signal for Fe3O4-Ag NPs confirming biosynthesis of silver nanoparticles. The results of MIC showed that Fe3O4-Ag nanoparticles had an inhibitory effect on p. aeruginosa growth at a lower concentration than ciprofloxacin.

**Conclusion:** Our results indicated to this fact that Fe3O4-Ag nanoparticles biosynthesis by Scenedesmus obliquus algae extract has Proper anti-bacterial activity against human pathogens of P. aeruginosa.

**Keywords:** Opportunities, Scenedesmus obliquus, Biosynthesis, Multiple Drug-Resistant

# P126 - 659: DETERMINATION OF ANTIBIOTIC RESISTANCE PROFILE AND MULTI-DRUG RESISTANCE (MDR) STRAINS OF UROPATHOGENIC ESCHERICHIA COLI ISOLATED FROM URINARY TRACT INFECTION

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**Background and Aim:** Urinary tract infection is one of the most common infectious diseases and nosocomial infections worldwide and uropathogenic Escherichia coli is the first cause of urinary tract infection. Due to increased antibiotic resistance and the emergence of multi-drug resistant strains in particular UPEC bacteria, treatment of urinary tract infections associated with the UPEC is difficult.In this study antibiotic resistance profile and multi-drug resistance of uropathogenic Escherichia coli pathotypes isolated from urinary tract infection in Milad Hospital, Tehran were determined

**Methods:** For this purpose, 123 strains of Escherichia coli from urine samples of patients with urinary tract infection based on biochemical tests were identify and isolated. Antibiotic susceptibility all isolates were determined by disk diffusion method according to CLSI 2014, respectively

**Results:** The results showed that highest resistance were to the antibiotics Ampicillin 82.9 %, Cephalotin 78.1%, Tetracycline 61.1% and Co-trimoxazole 60.1% .The highest sensitivity to nitrofurantoin 95.5%, Amikacin 71.5% and Gentamicin 77.2% was observed. Also in this study the resistance to Cefazolin 49.5%, Ceftriaxone 38.2%, Ceftizoxime 30.2% and Ceftazidime 26.1% was reported. The resistance to Ciprofloxacin was 42.2%. Evaluation of antibiotic resistance against different classes of antibiotics showed drug resistance to at least one antibiotic in one or two classes (XDR) were 14.6% and resistance to three or more than three antibiotic classes(MDR) were78%

**Conclusion:** This study demonstrated high rate of antibiotic resistance ad Multi Drug resistance of UPEC E.coli strains in Milad Hospital ,Tehran.

**Keywords:** antibiotic resistance , MDR, UPEC E.coli , urinary tract

# P127 - 666: COMPARISON OF ANTIBACTERIAL EFFECTS OF SATUREJA MACRANTHA'S ESSENTIAL OIL WITH ALCOHOLIC EXTRACT OF PEGANUM HARMALA IN GRAM-NEGATIVE AND GRAM-POSITIVE BACTERIA

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**Background and Aim:** Due to the increasing resistance of pathogenic bacteria to antibiotics, researchers are willing to find out antimicrobial agents with plant origin instead of drugs. In this study antibacterial activity of satureja macrantha and peganum harmala was evaluated against gram negative and positive bacteria.

**Methods:** Essential oil of S. macrantha and alcoholic extract of peganum harmala was extracted by water vapour. Then, the diameter of inhibition zone of essential oil and alcoholic extract was investigated for both Staphylococcus aureus (PTCC1112) and Escherichia coli (PTCC1330) and compared with effect of nalidixic acid, erythromycin, nitrofurantoin antibiotics. Also, the MIC and MBC for S. macrantha and peganum harmala were studied.

**Results:** The essential oil and alcoholic extract of these plants have inhibitory effect on E. coli and S. aureus microbial strains, and minimum MIC and MBC of S. macrantha for E. coli is 0.18, 0.26, respectively and 0.2, 0.29 for S. aureus. Also, MIC and MBC of peganum harmala for E. coli is 0.6, 1, respectively and 0.45, 0.92 mg/ml for S. aureus. The diameter of inhibition zone of S. macrantha for E. coli 42 mm and S. aureus 39 mm and for peganum harmala 15 and 13 mm was observed.

**Conclusion:** Results showed both essential oil and alcoholic extract has high antimicrobial properties. While S. macrantha has better effects in comparison with peganum hamala and difference was statistically significant.

**Keywords:** Satureja macrantha, Peganum harmala, S. aureus, E. coli, antibacterial effects

# P128 - 667: EFFECTS OF A TRIPLEX MIXTURE OF ROSEMARY, CUMIN AND CINNAMON ESSENTIAL OIL ON ESCHERICHIA COLI AND PSEUDOMONAS AERUGINOSA BACTERIA

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**Background and Aim:** The aim of this study was to investigate and compared the antibacterial properties of essential oil of Rosemary, Cumin and Cinnamon on Escherichia coli and Pseudomonas aeruginosa bacteria.

**Methods:** Rosemary, cumin and cinnamon were extracted using the clevenger method by water vapor. By using the microdilution method, the effect of successive dilutions of essential oil of these three plant and their mixture on the suspension of E. coli and P. aeruginosa with the concentration of 0.5 McFarland Standard (1.5 × 108) was investigated. After digging the wells and cultivating bacteria on a Muller Hill Agar solid culture medium, 200 µl of essential oils with 99% purity were poured into wells. Then the plates were incubated at 37 ° C for 24h and the diameter of the growth inhibitory holes was measured.

**Results:** The MIC value of Rosemary, Cumin, Rosemary and Cumin, and the mixture of them were equal in E. coli and have the highest amount, whereas the lowest amount is related to cinnamon essential oil. The MIC value of rosemary essential oil is highest for P. aeruginosa. Comparison of mean diameter of the inhibitory zone showed that the essential oil of cinnamon had the highest diameter in E.coli and the mixture of essential oil of cinnamon and rosemary had the highest diameter in P. aeruginosa. Also, the essential oils of the plants showed better effects on inhibiting Pseudomonas growth compared to E.coli.

**Conclusion:** Consequently they can be used in treatment of infections caused by resistant bacteria.

**Keywords:** Rosemary, Cumin, Cinnamon, antibacterial properties, Escherichia coli, Pseudomonas aeruginosa

# P129 - 668: STUDY OF ANTIBACTERIAL EFFECTIVENESS OF ALLIUM HIRTIFOLIUM EXTRACT ON MULTI-DRUG RESISTANT ACINETOBACTER STRAINS

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**Background and Aim:** The spread of drug resistant in bacterial pathogens is one of the most earnest threats to successful treatment against bacterial infectious diseases. The problems of multidrug resistance exhibited by human pathogenic microorganisms and the side effects of antibiotics have led scientists to search for alternatives such as medicinal plants. Medicinal plants have long played important roles in the treatment of diseases all over the world. Allium hirtifolium was known as Persian shallot and used as a traditional medicine in Iran. The aim of this study is to evaluate the antimicrobial activity of shallot extract on MDR Acinetobacter.

**Methods:** Among 250 clinical samples, MDR Acinetobacter strains were identified and isolated. MIC and inhibition zone diameter analysis was done for Allium hirtifolium extract against all MDR and ATCC strains.

**Results:**The Allium hirtifolium extract at the concentration of 45µg/ml indicated inhibitory activity against MDR strains. All selected strains were sensitive from 45 to 1.40 µg/ml concentration of Allium hirtifolium extract.

**Conclusion:** In recent years, antioxidant and antimicrobial properties of plants products have been a great interest in food industry and pharmacology. This study indicated that Allium hirtifolium extract could be useful in combating drug-resistant in MDR Acinetobacter strains.

**Keywords:** Acinetobacter, Allium hirtifolium extract, multidrug-resistant

# P130 - 673: GROWTH CONTROL OF RESISTANT STRAIN OF PSEUDOMONAS AERUGINOSA ISOLATED FROM CYSTIC FIBROSIS PATIENT BY ESSENTIAL OIL OF THYME

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**Background and Aim:** Pseudomonas aeruginosa is responsible for 11 to 13 percent of nosocomial infections, especially in patients with cystic fibrosis and burning. The main problem in treatment of its related infectious is occurrence of MDR strains. The aim of this study was to evaluate the effect of thyme oil on resistant strain of Pseudomonas isolated from a patient with cystic fibrosis.

**Methods:** A dominant bacterium was isolated from the sputum of cystic fibrosis patient and enrolled in identification and antibiotic susceptibility tests. Essential oil of Thyme was prepared by a Clevenger apparatus and solubilized in water with emulsifiers by nanotechnology methods. Disk diffusion method was used for susceptibility testing of the isolate to herbal oil. MIC determination was carried out by Micro-broth dilution method using an ELISA reader apparatus.

**Results:** Pseudomonas isolate was resistant to many ordinary antibiotics. Solubilizing method could be solubilized the oil in water very well and permit to accomplished serial dilution method without any oiling out. In disk diffusion method up to 0.312 mg/ml concentration inhibition was detected. In the microplate dilution concentration of 5 mg/ml was determined as MIC.

**Conclusion:** It was proved that solubilized essential oil have perfect effects on drug-resistant Pseudomonas isolates in dissolved form. Therefore, it recommended for use as further studied in In-Vivo settings.

**Keywords:** Pseudomonas aeruginosa, drug resistance, cystic fibrosis, Thyme

## P131 - 685: EVALUATION THE SHIKONIN EFFECT ON DERMATOPHYTIC FUNGI

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**Background and Aim:** Shikonin is a major component of zicao (purple gromwell, the dried root of Lithospermum erythrorhizon), a Chinese herbal medicine with various biological activities. Zicao (purple gromwell), the dried root of Lithospermum erythrorhizon Sieb. et Zucc, Arnebia euchroma (Royle) Johnst, or Arnebia guttata Bunge, is a commonly used herbal medicine in China and other countries. This article aimed to evaluation the antifungal effect of Shikonin on dermatophytic fungi.

**Methods:** 10%, 20% and 30% of Shikonin was provided in commercial form. The antifungal activities of Shikonin were studied on dermatophytic fungal strains including Trichophyton mentagrophytes, Trichophyton rubrum, Microsporum canis and Candida albicans and recorded using cylinder test based on the diameter of inhibition zone in Sabouraud-Dextrose agar.

**Results:** Our data demonstrated that results from cylinder test showed that 30% of Shikonin was more effective than on dermatophytic fungi.

**Conclusion:** Shikonin had more effective on Trichophyton rubrum whereas to other dermatophytic fungi.

**Keywords:** Dermatophytes, Fungi, Shikonin

# P132 - 688: ANTIBIOTIC RESISTANCE PATTERNS IN STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM URINARY TRACT INFECTIONS IN MARAND, IRAN

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**Background and Aim:** Staphylococcus aureus is an important factor for nosocomial infections in Iran and all over the world. Nowadays, the antibiotic resistance is increased due to excessive consumption which poses a problem in the treatment of diseases caused by this bacterium. This study aimed to evaluate the resistance level in strains isolated from urinary tract infections of hospitalized patients in Ayatollah Kohkamari and Razi hospitals in Marand city.

**Methods:** In this cross-sectional study, 130 isolates of Staphylococci were collected during 2016. After isolates were identified using standard microbiological methods, their resistance to seven antibiotic types was evaluated using disk diffusion method based on CLSI (Clinical and Laboratory Standard Institute) standards.

**Results:** From a total of 130 isolates, 52 isolates were Staphylococcus aureus. The rates of resistance to antibiotics were as follow: penicillin 94.2%, amoxicillin 98%, ampicillin 78.8% cephalexin 25%, clindamycin 23%, tetracyclin 19.2% and ciprofloxacin 11.5%.

**Conclusion:** The result showed high rates of antibiotic resistance in the staphylococcus aureus isolated from this hospital. Increasing resistance in these isolates was a serious threat to these hospitals which creates limitations for treatment options of patients infected with nosocomial infections. Also, given to the difference between antibiogram results in different areas, the use of regional antibiotic resistance patterns in experimental treatment before treatment was necessary.

**Keywords:** Antibiotic resistance, Staphylococcus aureus, Urinary tract infection

# P133 - 689: PREPARATION AND CHARACTERIZATION ZNO NANOPARTICLES COATED BY CHITOSAN-LINOLEIC ACID ; FUNGAL GROWTH AND BIOFILM ASSAY

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**Background and Aim:** Candida albicans(C. albicans) is an opportunistic pathogen fungi which is able to cause disease and form biofilm that are potentially resistant to common antifungal treatment. Discovering agents with antifungal properties and minimum side effects and Toxicity is necessary for control of biofilm disperse.This study has been carried out on reviewing the use of new synthetic component of zinc oxide nanoparticles (ZnO NPs) coated by Chitosan-linoleic acid (CS-LA) and to assess Minimum inhibitory concentration (MIC) of nanoparticles on clinical samples and biofilm formation in vitro.

**Methods:** At first the synthesized ZnO NPs coated by CS-LA then were identified with XRD, SEM, TEM and FTIR.Through in vitro tests, the value of MIC and Minimum fungicide concentration (MFC) of nanoparticles for and standard and clinical strains of candida were evaluated in comparison with fluconazole as control group According CLSI-M27 method. Finally, biofilm formation was studied using MTT assay.

**Results:** MIC50 of fluconazole and nanoparticle in clinical strains was 64µg/ml and 128µg/ml respectively.The MIC of fluconazole and nanoparticle in C. albicans (ATCC10231) was 8µg/ml and 32µg/ml respectively. The MFC of nanoparticle and fluconazole for clinical samples was recorded as similar level (128µg/mL). MTT results indicated that the capacity of inhibition biofilm formation was 43.07% and 36.68% by ZnO NPs and fluconazole respectively.

**Conclusion:** The new synthesized nanoparticle has appropriate efficacy compared with fluconazole in inhibitory activity on C.albicans growth and biofilm formation. As a result, ZnO NPs can be introduced as effective agent for diminish adhesion capacity of C. albicans.

**Keywords:** C. albicans, Zno nanoparticle, Biofilm formation

# P134 - 690: EVALUATION OF LOW LEVEL DISINFECTANT ANTIMICROBIAL ACTIVITY UNDER CLEAN AND SEMI CLEAN CONDITIONS

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**Background and Aim:** Application of disinfectants and antiseptics has an important role in control of microbial infection in medical and health care centers. Therefore, several microbiological tests have been developed by different international organizations to control the biocidal activity of commercial disinfectants. Microbial suspension test is the usual method that has been used for initial evaluation of antibacterial agents, but the conditions of experiment may not be the same as the real conditions. The purpose of this study was to evaluate the antimicrobial activity of 0.02% benzalkonium chloride (BAC) solution under clean and semi clean conditions by using albumin as an interfering substance.

**Methods:** In this study, the effects of 0.02% BAC solution on Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa and Candida albicans, have been evaluated using suspension test according to European and AFNOR standards. The suspension tests were conducted in clean condition using distilled water and semi clean condition using hard water and %0.03 albumin.

**Results:** In both clean and semi clean conditions, a 5-log reduction in S. aureus, E. coli, and P. aeruginosa counts were detected in 3, 3, and 15 min, respectively. A 4-log reduction in C. albicans was observed in 1 min. It showed the highest activity against Staphylococcus aureus and the lowest effect on Pseudomonas aeruginosa.

**Conclusion:** Results of this study indicated that using hard water and %0.03 albumin had not significant effect on antimicrobial activity of BAC%0.02 solution.

**Keywords:** Microbial standard test, benzalkonium chloride, disinfectant, suspension test

# P135 - 694: A REVIEW ON THE ANTIMICROBIAL EFFECT OF EXTRACTS OF MEDICINAL PLANTS

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**Background and Aim:** Using of antimicrobial features of medicinal plants to treat infections caused by resistant strains of bacteria in medicine and food industry has been important with the increasing number of strains resistant to multiple antibiotics. For this reason, the use of medicinal plants and their derivatives for the treatment of human disease is spreading at the worldwide. The main aim of this review was to determine the effect of various extracts on the various bacteria.

**Methods:** This study was a systematic review in which articles from databases, both internal and external, Iranmedex, SID, Science Direct, Scopus, Google Scholar and PubMed were received and evaluated using the key words of effect Microbial and Medicinal Plants.

**Results:** Review of the results of various studies showed a variety of extracts including alcoholic, water, chloroform and hexane extracts prevent the growth of bacteria. Some of these extracts were more effective on Gram-positive bacteria and some of them on Gram-negative bacteria. It was also found that alcoholic extracts (ethanol and methanol), among the extracts, had the greatest impact on bacteria.

**Conclusion:** Plant extracts could be used to treat a variety of diseases instead of chemical antimicrobial drugs that have side effects. As a result, they could be used to produce new herbal medicines with fewer side effects and as an alternative to commonly used antibiotics in the treatment.

**Keywords:** Antimicrobial, Medicinal plants, Plant extracts

# P136 - 700: INVESTIGATION OF ANTIMICROBIAL PATTERN OF UROPATHOGENS ISOLATED FROM PREGNANT WOMEN IN KERMAN

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**Background and Aim:** Among the most common infectious diseases, urinary tract infection is the second one. Enterobacteriaceae family are the causative agents for most urinary tract infections (UTI). Although large numbers of new antibiotics were discovered over the past decades but they could not stop bacterial resistance and some of those antibiotics are now ineffective. The resistance crisis has been related to the overuse and misuse of these antibiotics, as well as a lack of new drug development by the pharmaceutical industry. So, investigation on the pattern of antibiotic resistance of uropathogens from pregnant women in Kerman hospitals is the purpose of this study.

**Methods:** In this study, urine samples of pregnant women were sent to the laboratory. After identification of strains, the antibiotic sensitivity definition test, using Antibiogram disk diffusion method, was done.

**Results:** In this study, UTI was caused by gram negative bacteria. Most bacterial isolates (63.63% Escherichia coli, 5.34% Citrobacter spp, 2.67% Proteus spp. 21.92% Klebsiella spp., 4.27% Enterobacter spp., and 2.13% Pseudomonas spp) showed highest resistance rate to Amoxicillin (93%) and lowest resistance rate to Imipenem (7.19%).

**Conclusion:** Resistance to Amoxicillin was found in alarming rates. This drug has lost its capability to inhibit uropathogens. Gentamicin and Imipenem are relatively satisfactory and effective in treatments of UTIs. Therefore, Analyzing antibiotic susceptibility pattern of uropathogens helps us to have a better programmed plan to overcome the therapeutic difficulties created by the rising antimicrobial resistant bacteria and have a good guide in choosing appropriate antibiotics.

**Keywords:** Uropathogens, Antibiotic resistance, Disc diffusion

# P137 - 702: SURVEY OF DIFFERENT ANTIBIOTIC SENSITIVITY IN YERSINIA RUCKERI AND STREPTOCOCCUS INIAE BACTERIA'S INFECTION FROM GOLD FISH (CARASSIUSCARASSIUS) BREEDING UNITS OF TABRIZ CITY

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**Background and Aim:** Following report of mortality in the Population of gold fish's from breeding unit of Tabriz city we start to check the unit's environment and collect Symptomatic fish samples to send to the laboratory and other Postmortem examinations.

**Methods:** Autopsy of hepatic tissue and gill have been done and samples collected. Gram stain, differential diagnostic and antibiogram tests done.

**Results:** Autopsy results show us scales loss, exophthalmia and Petechiae in oral region. Results of bacterial culture from oral region (gill) and hepatic tissue show us both gram negative and positive bacteria's in collected samples.In the gram stain bacilli'ssuspected toYersinia ruckeri and Streptococcus iniae was observed also In order to differential diagnosis of bacteria chrome agar medium and outher difrential daiagnostic methods uses and show us this bacteria's.Antibiogram test results showed gram negatives are resistant to Amoxicillin, Neomycin, Tylosin, Erythromycin, Gentamycin and Cefalexin antibiotics and sensitive to Enrofloxacin, Colistin, Ciprofloxaacin, Doxycycline, Florfenicol, LincoSpectin, Sultrim, Oxytetracyclin and Chlortetracyclin also gram positives are resistant to Amoxicillin, Tylosin, Erythromycin, Cefalexin and sensitive to Neomycin, Gentamycin and others. Oral solution of Enrofloxacin used 1cc/10 lit per day for seven days in rout of additive to water for treatment also vitamin C as Soluble in water was used and complete healing was achieved.

**Conclusion:** Antibiogram test shows some human antibiotics traditionally were used for the prevention of infectious diseases such as Amoxicillin, Cefalexin and Gentamycin. This Taking non-prescription drugs will have dangerous consequences for human health due to the bacterial resistance.

**Keywords:** Bacterial infection, Antibiogram, gold fish, Bacterial resistance

# P138 - 703: REPORT OF AEROMONASHYDROPHILA ZOONOTIC BACTERIA FROM RED-EARED SLIDER TURTLE (TRACHEMYS SCRIPTA) INURMIA CITY

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**Background and Aim:** Aeromonas hydrophila is a Gram-negative and Movable bacteria and it is a normal flora of Aquatic Animal's digestive system and water's. At the Environmental stressors Conditions in water the bacteria infected fishes and aquatic animals and cause a disease. The disease caused by bacteria it's a Zoonotic and can be horizontal transmitted to human.

**Methods:** By visiting a Red-eared slider turtle with symptoms of lethargy, anorexia, exophthalmia it was decided to sampling from its eyes for more tests. Primary cultured of sample in the TSA and Brain Heart Infusion Agar (BHI Agar) and in order to differential diagnosis of bacteria BLA and MCA and TCBC were used and biochemical tests done.

**Results:** Bacterial cultures and tests show us A.hydrophila in the sample. result of the antibiogram test show us the bacteria resistant to antibiotics such a Erythromycin, Neomycin, Doxycycline, Amoxicillin, Clindamycin, Cephalexin, Oxytetracyclin and The sensitive antibiotics are Gentamaycin, Enrofloxacin, LincoSpectin and ciprofluxasi. Enrofloxacin bath used Per day until Complete healing was achieved.

**Conclusion:** According to the Extension of bacteria in the Environment, observing health issues is very important to Prevention of this Disease and the use of effective antibiotics can prevent bacterial resistance And it also prevented disease in humans.

**Keywords:** Aeromonas hydrophila, Enrofloxacin, turtle, Bacterial resistance, Zoonotic

# P139 - 704: REPORT OF AEROMONASHYDROPHILA FROM ORNAMENTAL FISH BREEDING UNITS (HEROS SEVERUS) OF THE URMIA CITY

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**Background and Aim:** Following reports of Aeromonashydrophila Disease in the Population of twothousand ornamental fish (Herosseverus) and with Daily deaths 10-5%. Ten live samples with symptoms have transferred toVeterinaryReference Laboratoryof Qazvin city.

**Methods:** Biopsy of hepatic tissue and anterior kidney in the Symptomatic fish Occurred and they were Primary cultured of bacteria in the TSA and BHIA Medium. In order to differential diagnosis of bacteria BLA and MCA and TCBC were used and biochemical tests such as oxidase, catalase, glucose, Mannitol, lactose, inositol, xylose, Simmons Citrate, SIM,OF,KOH, nitrate done.

**Results:** Result of the antibiogram show us the bacteria resistant to antibiotics such a Erythromycin, Neomycin, Doxycycline, Amoxicillin, Clindamycin, colistin, Cephalexin, Chlortetracyclin, Danofloxacine, Doxycyclin, oxytetracyclin, Sultrim, Fosobac and The sensitive antibiotics are Florfenicol, enrofloxacin, LincoSpectin, cefixime, cefuroxime.Enrofloxacin used Per day for 10 days orally with food For treatment and also vitamin Aminosol as Soluble in water was used and Complete healing was achieved.

**Conclusion:** According to the microflora of bacteria and Extension of it in the water, observing health issues is very important to Prevention of this Disease And the use of effective antibiotics can prevent bacterial resistance And it also prevented disease in humans.

**Keywords:** Aeromonas hydrophila, Enrofloxacin, Fish, Bacterial resistance

# P140 - 706: STUDY OF ANTIBACTERIAL EFFECT OF URTICA EXTRACT ON MULTI DRUG RESISTANT (MDR) KLEBSIELLA STRAINS

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**Background and Aim:** Klebsiella organisms are often resistant to multiple antibiotics. Klebsiella species with the ability to produce extended-spectrum beta-lactamases (ESBL) are resistant to many classes of antibiotics.Epidemiologic studies have shown a direct relationship between the use of antibiotics and emergence of resistant bacteria. Urtica extract consists of Tannin that has antioxidant and antimicrobial effects. The aim of this research is study of anti-bacterial effect of Urtica extract on MDR Klebsiella.

**Methods:** 230 samples were collected from the patients in ICU of General Hospital during 2016-2017. klebsiella strains were isolated and identified using biochemical tests. Antibacterial assay was conducted to select MDR resistant strains. Minimum Inhibition Concentration (MIC) and inhibition zone diameter of Urtica extracts was determined using broth micro-dilution method.

**Results:** The Urtica dioica extract at the concentration of 29 µgr/ml indicated inhibitory activity against MDR klebsiella. According to results obtained from antibacterial assay, all MDR and ATCC strains were sensitive from 7.25 to 3.62 µg/ml.

**Conclusion:** Study results showed that Urtica dioica extract has a very good effect on the resistant Klebsiella. The herbal extracts can be used in parallel with the antibiotic treatments and benefited from their antibacterial effects on the resistant bacteria.

**Keywords:** Klebsiella, Multidrug Resistant, Urtica extract

# P141 - 708: INVESTIGATION ANTIMICROBIAL ACTIVITY OF ALGAE EXTRACT OF LAURENCIA CASPICA ON PATHOGENIC BACTERIA RESISTANT TO ANTIBIOTICS

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**Background and Aim:** In recent years, the widespread use of antibiotics leads to resistant strains of microorganisms that have created increased antibiotic resistance. According to the research conducted has been observed that multicellular algae, including algae laurencia caspica, are a rich source of compounds with a wide range of applications effects.

**Methods:** The extraction of algae in the study was conducted by soaking 10 mass-volume percent and using solvents of ethanol, chloroform, and water. These extracts for the preparation of concentrations of 0.2 mass-volume percent has been solved in Dimethyl sulfoxide (DMSO) then were sterilized using microbial filter 0.45 microns. The chemical composition of the extract was used gas chromatography connected to a mass spectrometer (GC-MS).

**Results:** MIC of these extracts against Gram-positive 125 PPM and for gram-negative bacteria and fungi are between 250 to 2000 PPM. The result of antibiogram tests Salmonella enteritidis 1709, Escherichia coli 1399, Klebsiella pneumoniae, Staphylococcus aureus 1113, Pseudomonas aeruginosa 1430, Candida_albicans 5027 showed that inhibition zone diameter of agar well diffusion method is more than the disk diffusion method.

**Conclusion:** These results are probably due to direct contact direct contact algal extract with bacterial strains in the pit method. The results of this study showed that extracts of this algae are more effective on gram-positive bacteria.

**Keywords:** Algae extracts, antibiogram, bacteria, Laurencia caspica

# P142 - 709: PREVALENCE OF EXTENDED-SPECTRUM B-LACTAMASES (ESBLS) IN ENTROBACTER CLOACAE ISOLATED FROM HOSPITALIZED PATIENTS IN IMAM REZA HOSPITAL IN KERMANSHAH, IRAN, 2017.

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**Background and Aim:** Entrobacter cloacae is one of the most frequent species involved in nosocomial infections. One of the antibiotics is used to treatment of E. cloacae strains infections is β-lactam family antibiotics. Production of Extended Spectrum β-Lactamase (ESBLs) is the main mechanism fopr resistance to β-Lactam antibiotics.

**Methods:** In this study a total of 160 E. cloacae isolates were recovered from hospitalized patients in Imam Reza hospital in Kermanshah. The identification of E. cloacae isolates was carried out by using microbiological and biochemical standard laboratory methods. 124 (77.5%) E. cloacae isolates were screened for production of ESBLs with selected five antibiotic according to CLSI method: Ceftriaxone (30µg) Ceftazidime (30µg), Cefotaxime (30µg), Aztreonam (30µg) and Cefpodoxime (10µg) .Resistance to one or more of these antibiotics were an indicator for screening of ESBL producing E. cloacae isolates. After that existence of this enzymes were confirmed by Combined Disk Method. The existence of TEM and SHV type genes were determined by using PCR method

**Results:** All of E. cloacae isolates in this study were ESBL positive by using screening test. Results of confirmatory test showed that by using CD method 117 (73.12%) of E. cloacae isolates were ESBLs-producing. Results of PCR revealed, out of 62 cases (78.74%) and 27(27.07%) of E. cloacae had TEM and SHV genes respectively. 12 cases ( 10.25%) had both of two genes

**Conclusion:** Results of this study showed the prevalence of ESBLs-producing E. cloacae isolates in this area is high.

**Keywords:** Antibiotic resistance, Entrobacter cloacae, ESBL

# P143 - 715: OCCURRENCE OF KPC AND OXA-48 GENES AMONG KLEBSIELLA PNEUMONIAE ISOLATED FROM CLINICAL SPECIMENS IN KHORRAMABAD HOSPITALS, IRAN

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**Background and Aim:** Carbapenem-resistant Klebsiella pneumoniae (CRKp) are caused by various mechanisms including; K. pneumoniae carbapenemases (KPCs), and other class A, B (metallo-beta-lactamases), and D beta-lactamases (OXA-48). The aim of this study was to assess the occurrence of KPCs and OXA-48 genes among K. pneumoniae isolated from clinical specimens in Khorramabad City, Iran.

**Methods:** In this cross-sectional study, 123 K. pneumoniae strains isolated from clinical samples including; blood, urine, sputum, and wound in two university hospitals, Khorramabad, Iran. Phenotypic susceptibility testing and carbapenemases production were performed using disk diffusion and Modified Hodge test (MHT) methods, respectively. Detection of KPCs and OXA-48 genes was done by PCR. Clonal similarity among the strains was tested by repetitive sequence-based PCR (rep-PCR).

**Results:** Among the 123 tested isolates, the highest and lowest resistance rate was related to ampicillin (95.9%) and, amikacin(16.3%), respectively. Ten isolates designated as carbapenemase-producing by MHT. While 13 isolates harbored OXA-48 gene, none of them were carriers of KPC genes. 56 cluster distinguished by rep-PCR. Cluster 12 (12 strains) was the main cluster

**Conclusion:** The emergence of OXA-48 producing K. pneumoniae in our hospitals is of great concern. Although the presence of OXA-48 could be a reason for resistance to carbapenems, other classes of beta-lactamases and mutation in outer membrane proteins might associate with resistance phenomenon

**Keywords:** Klebsiella pneumoniae, KPC, OXA-48

# P144 - 716: ANTIMICROBIAL ACTIVITY AQUEOUS, ETHYL ACETATE AND ETHANOLIC EXTRACTS OF PLEUROTUS SAJOR-CAJO MUSHROOM IN IRAN

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**Background and Aim:** With development of rising resistance medication between bacteria and fungi and their side effects of antibiotics, discussion create new antibiotics of natural resources especially mushrooms medications in the treatment of diseases of interest to researchers. Several studies of the antibacterial effect of medicinal mushroom extracts including gandoura mushroom is proved.

**Methods:** Water extracts, alcoholic, ethyl acetate Pleurotus sajor-cajo mushroom prepared by sox let and after removal of the solvent evaporation device using the Rotary.

**Results:** The results of the study antibacterial and anti-fungal extracts of the mushroom extracts Pleurotus sajor-cajo with increasing concentration of the extract increases inhibition highest, concentration of 1000 mg / ml to extract indicates that the microorganisms sensitive and Results showed that all except Pseudomonas aeruginosa isolates were sensitive to the ethyl acetate extract and inhibition zone diameter that is between 14-6.5 mm.

**Conclusion:** Antibacterial and anti-fungal extract significant due to the effect on pathogenic bacteria, especially gram-positive samples to create a variety of malware infections and hospital involved, the extract can be considered as a natural product.

**Keywords:** Antimicrobial Activity , Pleurotus sajor-cajo mushroom, ethyl acetate , ethanolic extracts

# P145 - 721: CO-RESISTANCE AMONG PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM HOSPITALIZED PATIENTS

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**Background and Aim:** Pseudomonas aeruginosa is one of the more problematic drug-resistant bacteria encountered nowadays in worldwide. We are now faced with growing clones of co-resistant P. aeruginosa in hospital settings. The aims of our study was to examine the co-resistance patterns in clinical isolates of Pseudomonas aeruginosa

**Methods:** Strains recovered consecutively from different samples of hospitalized patients between 2014 and 2016 in Gonabad, Iran, were tested. Culture of specimens was performed on common bacteriological culture media. The isolates were recognized as P. aeroginosa based on morphological and bio-chemical tests. All isolates were tested for their antimicrobial susceptibility patterns using the standard guidelines issued by the clinical and laboratory standards institute (CLSI).

**Results:** Ninety-five P. aeruginosa isolates were studied during the above mentioned period. The isolates were recovered from 30 males (31.6%) and 65 females (68.4%). Thirty-four (35.5%) of infected patients were included in 30 to 44 year age group. There were 24 (25.3%) patients hospitalized in intensive care unit (ICU). Thirty-one (32.6%) of strains were isolated from blood. 5.26% of the tested isolates were co-resistant to ceftazidime, amikacin, and piperacillin/tazobactam.

**Conclusion:** The co-resistant P.aeruginosa strains are emerging. The main focus of combination-antibiotic therapy against P. aeruginosa is preventing the emergence of antimicrobial resistance and treatment failures. The guidelines for each bacterium include antibiotics of proven effectiveness that show acceptable results in antibiotic susceptibility test.

**Keywords:** Hospital, Pseudomonas aeroginosa, antibiotic co-resistance

# P146 - 726: ANTI-BACTERIAL ACTIVITY OF PROBIOTIC LACTOBACILLUS CASEI SUPERNATANT AGAINST MDR CLINICAL ACINETOBACTER STRAINS ISOLATED FROM VENTILATOR.

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**Background and Aim:** Hospital infections caused by opportunistic pathogens have commonly been well-known as a significant cause of the health care burden and patient death worldwide. Ventilator-associated pneumonia (VAP) is one of the most common infections acquired in the hospital with the highest prevalence in intensive care units (ICUs). Acinetobacter strains are identified as an important pathogen creating nosocomial pneumonia. The secondary metabolites of probiotic bacteria have frequently been to have some anti-microbial activity against many pathogenic microorganisms. The goal of this study was to evaluate the anti-bacterial effects of probiotic lactobacillus casei metabolites on multidrug resistant Acinetobacter strains isolated from ventilator.

**Methods:** 270 samples were collected from ventilators in ICU wards of Rasoul-e-Akram Hospital during 2016-2017. Acinetobacter strains were isolated and identified using differential and biochemical tests. Anti-bacterial assays were conducted to select MDR clinical strains. Inhibition zone diameter and minimum inhibitory concentration (MIC) assay for all Acinetobacter strains was completed by supernatant extracted from cultured lactobacillus casei.

**Results:** Lactobacillus casei supernatant indicated an inhibitory activity against MDR Acinetobacter strains and the MIC of supernatant was 0.125 µg/ml.

**Conclusion:** The results showed that the supernatant of lactobacillus casei has anti-bacterial activity against MDR Acinetobacter strains and it could be used alone or along with antibiotics against resistant pathogen bacteria.

**Keywords:** Acinetobacter, Hospital infections, Lactobacillus casei, Multidrug resistance, Probiotic, Ventilator-associated pneumonia

# P147 - 727: EVALUATION OF ANTI-BACTERIAL ACTIVITY OF LACTOBACILLUS REUTERI SUPERNATANT AGAINST MULTIDRUG RESISTANT KLEBSIELLA STRAINS

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**Background and Aim:** Nosocomial infections caused by gram-negative bacteria are well-known as one of the major cause of morbidity and mortality. Anti-microbial resistant pathogens are considered as challenges for controlling the emerging infections, especially hospital-acquired infections. Anti-microbial effects of probiotic bacteria are formed by producing some substances such as organic acids (lactic, acetic, propionic acids), carbon dioxide, hydrogen peroxide, diacetyl and bacteriocins. Lactobacillus, as a probiotic bacteria, has been shown to exert an anti-bacterial effect on a number of pathogens by secondary metabolites. The aim of this study was to evaluate the anti-bacterial activity of Lactobacillus reuteri supernatant on multidrug resistant (MDR) clinical Klebsiella strains isolated from nosocomial infections.

**Methods:** 260 samples were collected from nosocomial infections wards of Rasoul-e-Akram Hospital (Tehran) during 2016-2017. The clinical Klebsiella strains were isolated and identified using biochemical tests. Anti-bacterial assay was conducted to select MDR strains. Inhibition zone diameter and MIC assay was performed for all confirmed MDR Klebsiella strains. Minimum Inhibitory Concentration (MIC) of Lactobacillus reuteri extracts was determined using broth micro-dilution method.

**Results:** Lactobacillus reuteri supernatant indicated an inhibitory activity against MDR Klebsiella strains and MIC of Lactobacillus reuteri supernatant was 0.125 µg/ml.

**Conclusion:** Our results showed that Lactobacilus reuteri could exert an anti-bacterial effect against MDR clinical Klebsiella. This probiotic bacteria could be used for opportunistic infections treatment in parallel with the common antibiotics because of its anti-bacterial effects on the MDR hospital-aquired infections

**Keywords:** Nosocomial infections, Klebsiella, Multidrug Resistance, Lactobacillus reuteri

# P148 - 728: EVALUATION DRUG OF RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS ISOLATED FROM TABRIZ HOSPITAL

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**Background and Aim:** Incorrect use of antibiotics in the past few decades has led to strains of staphylococcus aureus are resistant to penicillin and vancomycin. Since the carriers of this becteria in the nose , is one of the main sources of infection in hospitals, the aim of this study was to determine the Evaluation of Staphylococcus aureus resistance to drugs in tabriz

**Methods:** In this descriptive- sectional study in 2014 , 1100 cases of anterior nasal visitor of Tabriz Hospital was prepared by sterile swabs. After identification of s. aureus by biochemical and microbiological testing , antibiotic resistance patterns of isolates by disk diffusion method for 13 antibiotics was determined.

**Results:** In this study, 37/45% of patients were nasal carriers of s. aureus . So that 61/16 percent were female and 38/83% male and were not significant association between the carrier and variables such as occupation, sector, gender and age (p>0/05). Drug sensitivity in patients with nasal carrier were as follows: vancomycin(95/3%), Tyykoplanyn (95/3%), linezolid (95/3%), koynoprystyn-Dalfoprystyn (95/3%), and ciprofloxacin (94/1%) , rifampin(93%), clindamycin (88/3%), and methicilin (88/3%), erythromycin(82/6%), tetracycline(75/6%), penicillin (4/7%), amoxicillin (3/5%), ampicillin (3/5%).

**Conclusion:** considering this study 37/54% of visitors, were carrier of S. aureus and Isolates strain had resistance with most antibiotics commonly used in the treatment of S. aureus infections. This could cause a potential hazard.

**Keywords:** Staphylococcus aureus, Antibiotic resistance, hospital

# P149 - 729: ANTIBIOTIC RESISTANCE PATTERNS OF SALMONELLA TYPHIMURIUM ISOLATED FROM SHARIATI HOSPITAL IN TEHRAN

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**Background and Aim:** Salmonella typhimurium, is a member of Entrobacteriacea family and it gram negative bacilli and optional anaerobic. Salmonella causes differrent illnesses including gastroenterite and typhoid fever. the aim of this study was to determine the Evaluation of Salmonella typhimurium resistance to drugs in tehran.

**Methods:** In this research, one hundred samples of Tehran shariati Hospital were collected . After cultivation and isolation of salmonella by using of disc diffusion method medicinal resistance towards 21 of the antibiotics was assessed.

**Results:** The greatest resistance belong to drugs like penicillin 100% , Cephalexin 97.2% , Cephalothin 94.4% , Clindamycin 93% , Ampicillin 87.3% and the lower resistance is belong to drugs like Ciprophloxasin, 29.6% , Ceftizoxime 22.6%, Azitromysin 26% and lowest resistance is sterpetomysin with 22% resistant.

**Conclusion:** In this study salmonella bacteria show high resistance towards antibiotic disk belonging to Ampicillin , penicillin, cephalotion . These drugs should be removed from the therapeutic cycle of salmonella. To prevention the increasing resistance of salmonella bacteria towards antibiotics , we should not use antibiotics in large quantities at all.

**Keywords:** Antibiotic Resistance, Salmonella typhimurium, Hospital

# P150 - 730: ANTIBIOTIC RESISTANCE PATTERNS OF PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM IMAM REZA HOSPITAL, URMIA, IRAN

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**Background and Aim:** Pseudomonas aeruginosa is the most common organism, which is separated from the burn infections. Due to increased antibiotic resistance, there are many problems to deal with the infections caused by Pseudomonas aeruginosa. This study aimed to determine the resistance to antibiotics against clinical isolates of Pseudomonas using phenotype methods.

**Methods:** 100 strains of P. aeruginosa were collected from the burn patients in Imam Reza hospital in Urmia, Iran, during a six- month period. After phenotypically initial identification, antibiotic sensitivity of isolated strains to conventional antibiotics against Pseudomonas aeruginosa was determined using a disk diffusion technique, and phenotypic screening for MBLs Production was performed .

**Results:** Maximum percentage was related to wound infection and the frequencies of the resistance to imipenem, meropenem, piperacillin, piperacillin-tazobactam, ceftazidime, gentamicin, amikacin, ciprofloxacin, doripenem, ertapenem and colistin sulphate, were 70%, 53%, 83%, 67%, 91%, 88%, 84%, 84%, 33%, 90% and 0%, respectively. The use of CD Test methods was approved for determining resistance to Carbapenems.

**Conclusion:** Antibiotic resistance to P. aeruginosa is increasing and colistin sulphate is the most effective antibiotic.

**Keywords:** Pseudomonas Aeruginosa , Antibiotic Resistance, hospital

# P151 - 731: THE PATTERN OF DRUG RESISTANCE IN ESCHERICHIA COLI STRAINS ISOLATED FROM IMAM REZA HOSPITAL, URMIA, IRAN

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**Background and Aim:** Escherichia coli is the most common gram negative rod and can cause a wide range of infections like, gastrointestinal infections, urinary tract infections, septicemia, meningitis in neonates and other clinical complications. The present study was designed to determine the Pattern of drug resistance isolates of E. coli.

**Methods:** For this descriptive study , a total of 10492 urine samples were examined during a 12-month period . They were all cultured in EMB, BA, and differential media , and then examined for E. coli. Antibiogram profile of the bacteria was determined by disk- diffusion test (Kirby-Bauer ) according to NCCLS standards.

**Results:** From 1815 positive samples, 824 Came out positive for E. coli Based on the result of antimicrobial testing resistance to Ampicillin, Co-trimoxazol, Cefixime Gentamicin, Ceftazidime and Nalidixic acid were 91.4%, 61.1%, 46.8%, 43.3%, 38.8%, and 38.5%, respectively. Furthermore Ciprofluxacin, Cefotaxim, Ceftriaxone and Nitrofurantoin had the highest sensitivity at 66.7%, 62.2%, 62.2%, and 48.8%, respectively.

**Conclusion:** Highest sensitivity was to Ciprofluxacin in this study. Also in clinical practice , it is the first antibiotic prescribed to treat urinary tract infection. In pediatric surgery, Ceftriaxone is a common treatment for which a high sensitivity was observed in this study. The highest resistance belongs to Ampicillin which explains why this drug is not recommended to treat urinary tract infections.

**Keywords:** Escherichia coli, Antibiotic resistance, hospitals

# P152 - 738: METALLO B-LACTAMASE GENES OF PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM MEMBRANES OF HOUSEHOLD WATER FILTER SYSTEMS IN AHVAZ CITY

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1. Presenter

**Background and Aim:** Pseudomonas aeruginosa is highly present in water systems. This bacterium has intrinsic antibiotic resistance because of low outer membrane permeability, and also extensive efflux pump system. The overall prevalence of antmicrobial resistance in P. aeruginosa isolates is increasing, so that up to 10% of global isolates found to be multidrug-resistant. The goal of the study was to evaluate the presence of metallo β-lactamase genes among the P. aeruginosa strains isolated from membranes of household water filter systems in Ahvaz city.

**Methods:** This study was performed on strains that were isolated of water filter systems in the city of Ahvaz. The one hundred samples confirmed as P. aeruginosa were studied. In these isolates ß-lactamase production was investigated by Dual Disc evaluation method based on CLSI standards and also four Metallo ß-lactamase genes included blaIMP-2, blaVIM-2, blaNDM and blaSIM genes were investigated by molecular tests.

**Results:** blaIMP-2, blaVIM-2 and blaSIM was not detected in any of isolates. blaNDM was identified in 1(1%) of samples respectively.

**Conclusion:** Presence of metallo β-lactamase resistance genes in Pseudomonas strains isolated from membranes shows the prevalence of these genes, resistant bacteria, and the possibility of transferring them to the body.

**Keywords:** Pseudomonas aeruginosa, metallo β-lactamase, household water filter systems, antibiotic resistance

# P153 - 743: THE STUDY OF THE SPREAD OF ERMA AND ERMB GENES IN ISOLATED ENTEROCOCCUS FAECALIS RESISTANT TO ERYTHROMYCIN, CLARITHROMYCIN AND CLINDAMYCIN PREPARED FROM IMAM KHOMEINI HOSPITAL IN BOROUJERD

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**Background and Aim:** Enterococcuses are of the most important Hospital infections and often separated in hospitals in Iran. Having high capability in causing infectious diseases like Endocarditis, Urinary Tract Infections (UTI), Meningitis, as well as, earning antibiotic resistance genes, its treatment has been encountered serious problems. This study was conducted to determine the spread of ermB and ermA genes in isolated Enterococcus faecalis using PCR procedure.

**Methods:** 100 samples of Entrococcuses, including samples prepared from blood, lesion, urine and Feces, were collected. Then, they were tested regarding their identity by using biochemical tests. Resistence to Antibiotics such as Erythromycin, Clarithromycin and Clindamycin was determined using Disc diffusion method based on CLSI standard.

**Results:** According to the biochemical tests, 100 percent of isolated samples were Enterococcus faecalis. Resistance for Erythromycin, Clarithromycin, and Clindamycin was estimated about 60%, 58%, and 100%, respectively. PCR results illustrated the presence of 89% ermB and 73% ermA genes.

**Conclusion:** The results of the present study shows that Enterococcus faecalis has high resistance to available Antibiotics and the presence of resistance genes is remarkable. Regarding the comfortable way of transferring resistance genes, doing more experiments on effective medicines against this Bacteria and some ways for decreasing the resistance are suggested.

**Keywords:** Enterococcus faecalis, Drug resistance, Erythromycin, Clarithromycin, Clindamycin, ermB, ermA

# P154 - 746: STUDY OF PREVALENCE VAN A, VAN B, VAN C1, VAN C2 AND VAN C3 GENES IN THE ENTEROCOCCUS FEACALIS

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**Background and Aim:** Enterococcus faecalis is the natural flour human and animals digestion system. Since two decades ago Vancomycin resistant Enterococcus (VRE) infections had increased and became the second leading cause of nosocomial infections. van gene is the factor of resistant Enterococcus faecalis to Vancomycin. The aim of the present study was to determine and investigate the van A, van B, van C1, van C2 and van C3 genes prevalence isolated from nosocomial patients.

**Methods:** One hundred E. faecalis isolates collected from Borujerd hospitals patients. After identifying, antimicrobial sensitivity test conducted by Disk prevalence method, and the results reported according to CLSI table. By PCR method van A , van B, van C1, van C2 and van C3 genes existence.

**Results:** The test results of sensitivity to antibiotics showed that between 10 samples resistant to Vancomycin, van A gene in 4 strain and van B gene in 6 strain were observed. van C1, van C2 and vanC3 genes did not found in any side.

**Conclusion:** Improving Vancomycin resistant had limited the medical and therapeutic options and the danger to transmit the resistant gene to the other types will be increased. Caution to use the antibiotics are so important and carrying out the test to antimicrobial sensitivity in these infections seems to be vital. High frequency of E. faecalis resistant to Vancomycin shows the improving medical resistant in Iran. This shows the necessary applying the controlling and preventing activities.

**Keywords:** Enterococcus faecalis, Vancomycin resistant, van A , van B, van C1, van C2, van C3

# P155 - 747: MIC DETERMINATION OF ZOUSH OINTMENT ON PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is gram negative and opportunistic bacterium can cause different infections such as; burn infections. Regarding the increasing prevalence of MDR and XDR isolates of this organism, we studied MIC Determination of ZOUSH Ointment against P.aeruginosa.

**Methods:** Plant extracts was prepared in Barij essence pharmaceutical Co. At first MIC of Satureja Khuzestaniea, Zataria Multiflora, Mentha Mozaffariani Jamzad, Honey and Polyurethane was determined. Then we determined MIC of Dual composition and triple composition of plant extracts. Finally, MIC of ZOUSH ointment component was determined.

**Results:** Our results showed that MIC of Satureja Khuzestaniea were, Zataria Multiflora, Mentha Mozaffariani Jamzadand Honey were 0.079 ?g/ml, 0.079 ?g/ml and 0.158 ?g/ml. Also, MIC of Satureja Khuzestaniea and Zataria Multiflora composition was 0.059 ?g/ml, MIC of Satureja Khuzestaniea and Mentha Mozaffariani Jamzadcomposition was 0.079 ?g/ml, MIC of Zataria Multiflora and Mentha Mozaffariani Jamzadcomposition, and Satureja Khuzestaniea, Zataria Multifloraand Mentha Mozaffariani Jamzadcomposition respectively were 0.079 (?g/ml) and 0.039 ?g/ml and MIC of ZOUSH ointment was 0.039 ?g/ml, too.

**Conclusion:** The results of our study indicated that the MIC of ZOUSH ointment has been reduced, which is important for the better antibacterial properties of ZOUSH ointment compounds than the binary and triple mixture.

**Keywords:** Pseudomonas aeruginosa, MIC,ZOUSH, Satureja Khuzestaniea, Zataria Multiflora, Mentha Mozaffariani Jamzad

# P156 - 748: EVALUATE THE DISC DIFFUSION METHOD OF ZOUSH OINTMENT AGAINST PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Infectious diseases are one of the main causes of morbidity and mortality worldwide. Pseudomonas aeruginosa isolated from 10% of all infections. According to the fact, the antibiotics are the main ways to control the infections and emerging of multi drug resistance P.aeruginosa isolates, there is a significant concern about it. Thus this study aimed to evaluate the disc diffusion method of ZOUSH ointment against Pseudomonas aeruginosa.

**Methods:** Plant extracts was prepared in Barij essence pharmaceutical Co. At first, the MIC of Satureja Khuzestaniea, Zataria Multiflora, Mentha Mozafarian, Honey and Polyurethane was determined. In the next step, we used disc diffusion method (Kirby -Bauer) to measure inhibition zone of this extracts as single, double, and triple. Finally, the inhibition zone of ZOUSH ointment was measured.

**Results:** Our results revealed that the zone inhibition of disc 20?g of Satureja Khuzestaniea, Zataria Multiflora, Mentha Mozafarian, Satureja Khuzestaniea and Zataria Multiflora composition, Satureja Khuzestaniea and Mentha Mozafarian composition, Zataria Multiflora / Mentha Mozaffariani composition, Satureja Khuzestaniea, Zataria Multiflora / Mentha Mozafarian composition and ZOUSH ointment component were 16 ml, 14 ml, 15 ml, 15 ml, 16ml, 16 ml, 17 ml, 18ml, respectively.

**Conclusion:** The results of our Study presented that the inhibition zone of ZOUSH ointment has been higher than the single, binary and triple mixture, and its inhibition was equal to polymixine B 300u, too.

**Keywords:** Pseudomonas aeruginosa, Disc Diffusion Method, ZOUSH, Satureja Khuzestaniea, Zataria Multiflora, Mentha Mozaffariani Jamzad

# P157 - 749: THE ANTIBACTERIAL EFFECTS OF LYCOPERSICONESCULENTUM MILL EXTRACT AGAINST FOUR SPECIES OF GASTROINTESTINAL BACTERIAL PATHOGENS

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**Background and Aim:** Tomato fruit, scientifically called LycopersiconesculentumMill, is an important source of nutrients including vitamins, minerals, antioxidants which is expected to show antibacterial effects.The present study aimed to evaluateits antibacterial effects on 4 standard bacterial species, including Staphylococcus aureus (ATCC116538), Klebsiella pneumonia (ATCC700603), Shigella flexneri(ATCC12022) and Proteus vulgaris (ATCC6380).

**Methods:** In this experimental study, using microdilution broth method, the minimum inhibitory concentration (MIC) of LycopersiconesculentumMillextract were determined against standard strains of four bacterial species. The lab tests were repeated three times. The data were analyzed by statistical T-student test using SPSS, v 18.

**Results:** The MIC forLycopersiconesculentum Mill extract was significantly different among the bacterial species ($P< 0.05$).The highest growth inhibitory effect was found against Proteus vulgarisand the least one was recorded against Staphylococcus aureus.

**Conclusion:** The current study revealed significant and selective antibacterial characteristics of Lycopersiconesculentum Mill extract against different bacterial species. This suggests usingthis extract in pharmaceutical and food industries.

**Keywords:** Tomato extract, Antibacterial effect, micro-dilution broth method, Lycopersiconesculentum Mill, MIC

# P158 - 752: ADER-ADES MUTATIONS AND OVEREXPRESSION OF THE ADEABC EFFLUX SYSTEM IN CIPROFLOXACIN-RESISTANT ACINETOBACTER BAUMANNII CLINICAL ISOLATES

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**Background and Aim:** Overexpression of efflux pumps is a cause of acquired resistance to fluoroquinolones in Acinetobacter baumannii. The present study investigated the presence and overexpression of AdeABC efflux system and analyzed the sequences of AdeR-AdeS regulatory system in ciprofloxacin-resistant A. baumannii isolates.

**Methods:** Susceptibility of 50 clinical A. baumannii isolates to ciprofloxacin, imipenem, ceftazidime, cefepime, and gentamicin antimicrobials was evaluated by agar dilution method. Isolates were screened for the evidence of active efflux pump. Isolates were also examined for adeR-adeS and adeB efflux genes by PCR. The adeR and adeS regulatory genes were sequenced to detect amino acid substitutions. Expression of adeB was evaluated by quantitative reverse transcriptase PCR (qRT-PCR).

**Results:** There was a high rate of resistance to ciprofloxacin (88%), ceftazidime (88%), cefepime (74%), and imipenem (72%), and less resistance to gentamicin (64%). Phenotypic assay showed involvement of active efflux in decreased susceptibility to ciprofloxacin among 16 isolates. A 12.27- and 4.25-fold increase was found in adeB expression in ciprofloxacin-full resistant and ciprofloxacin-intermediate resistant isolates, respectively. Several effective mutations, including A91V, A136V, L192R, A94V, G103D, and G186V were detected in some domains of AdeR-AdeS regulators in the overexpressed ciprofloxacin-resistant isolates.

**Conclusion:** This study indicated that overexpression of the AdeABC efflux pump is important to reduce susceptibility to ciprofloxacin and cefepimein A. baumannii that, in turn, could be triggered by alterations in the AdeR-AdeS two-component system. However, gene expression alone does not seem adequate to explain multi-drug resistance phenomenon. These results could help to plan improved active efflux pump inhibitors.

**Keywords:** Acinetobacter baumannii, adeB, adeR, adeS, Ciprofloxacin resistance

# P159 - 753: STUDY THE EXPRESSION OF THE RECF GENE IN ESCHERICHIA COLI DINI- MUTANTS

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**Background and Aim:** The use of fluoroquinolone antibiotics such as ciprofloxacin has increased to control a large number of infectious diseases. In recent years, the resistance to these antibiotics has increased sharply, reducing their range of effects, impose drug costs, and increase mortality. Escherichia coli is one of the bacteria that has shown resistance to antimicrobial drugs in recent times. In the Escherichia coli, SOS response is activated by DNA damage. One of the genes in the SOS response is recA. RecA activity is controlled by proteins such as DinI and RecF.The RecF transfers the RecA into single strand, and fixes the RecA-DNA filament. Previous study has shown that removal of dinI does not inhibit recA expression in ciprofloxacin-resistant mutants.The purpose of this study was to determine the expression of recF in dinI-mutants.

**Methods:** For this purpose, the real time PCR method was used.

**Results:** The results showed that recF expression increased.

**Conclusion:** In conlusion, it is expected that in the absence of dinI, due to necessity of RecA activity, the expression of recF enhances.

**Keywords:** Escherichia coli, recF, recA, ciprofloxacin

# P160 - 754: GENOMIC DIVERSITY AND FREQUENCY OF CLASS 1 & 2 INTEGRONS IN MULTIDRUG-RESISTANT STRAINS OF ACINETOBACTER BAUMANNII ISOLATED FROM ICU IN WEST OF IRAN

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**Background and Aim:** According to the results of various studies using phenotypic methods, the prevalence of multidrug-resistant Acinetobacter baumannii isolates has been increasing worldwide. PFGE technique is known as the golden standard method to identify lots of bacteria species, especially Acinetobacter baumannii. The aim of this study was to determine clonal characterization and to investigate the prevalence of integron classes 1 and 2 and genes encoding OXA-23 & 24 in Acinetobacter isolates.

**Methods:** Seventy five A. baumannii isolates were collected from patients at Kermanshah hospitals. Testing antibiotics susceptibility was done by disk diffusion method. Polymerase chain reaction (PCR) was performed in order to detect classes 1& 2 integron and blaOXA-23-like, blaOXA-24-like. 37 isolates were identified as MDR from a total of 75 ICU strains and then these isolates were subjected to genotyping.

**Results:** The maximum drug resistance was observed against Ceftriaxone, Mezlocycline, Cefotaxime, Piperacilin, Ciprofloxacin and Imipenem. Frequency of class-one and class-two Integrons, blaOXA-23-like and blaOXA-24-like are respectively 33 (44%), 27 (36%), 60 (80%) and 14 (18.6%). Four clusters were obtained showing high homogeneity among MDR isolates.

**Conclusion:** Significant correlation between presence of integrons and resistance to different classes of antibiotic was observed in this survey. Monitoring of drug resistance using coexist gene integrase PCR and bla-OXA gene by cluster analysis is very important to plan specific infection control measures due to multidrug- resistance A. baumannii.

**Keywords:** Acinetobacter baumannii, Microbial Drug Resistance, Integron, OXA gene, Genotyping Techniques

# P161 - 755: MANAGE OF ANTIBIOTIC RESISTANCE IN ESCERICHIA COLI ISOLATES FROM URINARY INFECTIONS

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**Background and Aim:** Escherichia coli is the most prevalent facultative anaerobic species in the gastrointestinal tract of human and animals, usually a harmless microbe, but it is also a medically important bacteria causing a number of significant illnesses. Antimicrobial resistance in E. coli clinical isolates continue to be reported worldwide such that treatment of E. coli infections become complicated by the emergence of resistance to most first-line antimicrobial agents.

**Methods:** A total of 20 E. coli isolates were obtained from urinary infection of patients presented to medical laboratories in Tehran. Bacteria grown on MacConkey agar and EMB agar were identified by standard biochemical tests. Their resistance to four groups of antibiotics including ciprofloxacin, kanamycin, cefotaxime, and tetracycline were tested by using standard agar disc diffusion method in Mueller-Hinton agar. Their minimal inhibitory Concentration (MIC) was also evaluated using NCCLS standards. E. coli ATCC 25922 was used as control

**Results:** The results of three independent tests demonstrated resistance to ciprofloxacin, cefotaxim and tetracycline by both methods

**Conclusion:** This indicates once more existence of resistance in E. coli clinical isolates and proposes the measures of surveillance.

**Keywords:** Escherichia coli, Antibiogram, ciprofloxacin, kanamycin, tetracycline, cefotaxim

# P162 - 759: DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERNS OF ORNITHOBACTERIUMRHINOTRACHEALESTRAINS ISOLATED FROM POULTRY INDUSTRY IN IRAN BY DISC DIFFUSION AND MINIMUM INHIBITORY

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**Background and Aim:** Ornithobacterium rhinotracheale (ORT) is one of the emerging bacterial agents that was first isolated in Iranian poultry industry in 1999 by Banani et al.ORT causes respiratory distress, decreased growth, mortality anda drop in egg production in chickens and turkeys. Up to know, few studies have been evaluated antibiotic resistance of ORTs only by disk diffusion assay in Iran. To our knowledge, determination of minimum inhibitory concentration of Iranian ORTs has not been performed yet.The aim of this study was to isolate ORTs and determine antibiotic resistance of these strains against Ceftriaxone, Cephalexin and Gentamicin using disk diffusion and MIC tests.

**Methods:** 10 strains of ORT isolated and identified from suspected samples submitted to Razi Vaccine and Serum Research Institute. In addition to identification of these bacteria biochemically,PCR was done to confirm ORTs by using specific primers. Antimicrobial susceptibility tests were performed on 10 isolates from commercial chickens by either disk diffusion or MIC methods.

**Results:** Although, all10 isolates were resistant to Gentamicin and susceptible to Ceftriaxone andCephalexin in disk diffusion method, our studied strains revealed resistance to Gentamicin and Cephalexin and showed susceptibility to Ceftriaxonein MIC test.

**Conclusion:** The results of this study indicated that MIC determination method can be performed to obtain more precise results of antibiotic resistance in ORT isolates. more over, understanding the patterns of antibiotic susceptibility of ORTs would help to reduce unnecessary use of antibiotics and choose effective drugs for controlling the disease.

**Keywords:** Antibiotic resistance, Ornithobacterium rhinotracheale (ORT), Poultry, Minimum inhibitory concentration (MIC), Iran

# P163 - 764: PREVALENCE OF FACTORS CAUSING URINARY TRACT INFECTION IN PATIENTS REFERRED TO IMAM KHOMEINI HOSPITAL IN 2016 SHIRVAN

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**Background and Aim:** Urinary tract infections (UTI) are one of the most common bacterial infections that are most important after infection of the respiratory tract. Research conducted in different regions of the world indicates that Gram-negative bacteria are the most common cause of urinary tract infection, and among them, more than 80% of cases of urinary tract infections are E. coli. In the next stage, the gram-positive bacteria are known to be the cause of urinary tract infections. . Regarding the importance of urinary tract infections in this study, the prevalence of urinary tract infections in Imam Khomeini Hospital in Shirvan were evaluated during 2016.

**Methods:** The cultures of urine samples were collected from Imam Khomeini Hospital and the isolates were isolated in positive cases by biochemical tests including Motility, citrate, urea, Bile Esculin, TSI, SIM, salt tolerance and 6.5%, PYR tests.

**Results:** 5850 urinary cultures were performed, in which 295 cases (5.04%) were positive. Among the positive cases, the frequency was as follows: 62.03% E. coli, 12.54% Klebsiella species, 5.08% Streptococcus Group D, 4.40% Staphylococcus epidermidis, 3.72% Staphylococcus saprophyticus, 2.72% Proteus mirabilis , 2.38% Pseudomonas Aeruginosa, 2.38% Enterococcus, 2.38% Streptococcus, 1.35% staphylococcus coagulase negative, 0.68% Staphylococcus aureus, 0.34% Enterobacter aerogenesis.

**Conclusion:** Based on the results the low percentage of Staphylococcus aureus compared to Klebsiella and Streptococcus group D indicate a gradual change in prevalence of the most common causes of urinary tract infections from enterobacteriacea to gram-positive bacteria, especially Streptococcus group D, than Staphylococcus epidermius and Saprophyticus in the provience.

**Keywords:** Urinary tract infection, prevalence, bacteriological agents

# P164 - 768: ANTI ESCERICHIA COLI ACTIVITY OF HERBAL MEDICINES: A SYSTEMATIC LITERATURE REVIEW

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**Background and Aim:** Escherichia coli , gram negative bacilli of entrobacteriaceae family is commonly found in intestinal infections and many infections outside the intestine, like urinary tract infections (UTI), cholecystitis, wound infections, meningitis, septicemia, pulmonary infections, and many more. Plants are rich sources of bioactive compounds, hence they can be effective in a wide variety of diseases. So the wide variety of medicinal plants growing in Iran can be examined to treatment of disease.

**Methods:** Databases of Web of Science, PubMed, Scopus, Google Scholar, and Science direct were explored, and related articles were selected to review.

**Results:** Obtained results showed that Dianthus caryophyllus, Cinnamomum zeylanicum, Stachys inflata Benth, Heracleum lasiopetalumBoiss, Saturja bachtiaricaBunge, Thymus daenensisCelak, and Cuminum cyminum are the main medicinal plants can affect E.coli.

**Conclusion:** All needed information was received by searching key words such as E. coli, Plant extracts, herbal plants, Antibacterial activity. Databases including Web of Science, PubMed, Scopus, Google Scholar, and Science direct were used to search and the related articles were used to review.

**Keywords:** E. coli, Plant extracts, herbal plants, Antibacterial activity

# P165 - 778: WOUND HEALING EFFECT OF TEA TREE OIL ON METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) : AN ANIMAL STUDY

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**Background and Aim:** Wound healing effect of Tea tree oil on Methicillin Resistant Staphylococcus aureus (MRSA): an Animal Study.

**Methods:** A total number of twenty white New Zealand rabbits were divided into two groups in which number of males and females was equal. In the first group a sterile wound was created by burning the skin. In the second group wounds were infected by Staphylococcus aureus(MRSA) using McFarland tubes. For each wound one drop of Staphylococcus aureus was spilled. In each group two subjects were claimed as control. Then sampling was done on seventh, fifteenth and twenty first days. Samples were both pathologically and morphologically studied. Statistical analysis was performed using the $\chi 2$ test and Fisher's exact test.

**Results:** Infected subjects were all healed. Although amongst the first group, in which a sterile burn wound was created, females showed better results.

**Conclusion:** Infected subjects were all healed. Although amongst the first group, in which a sterile burn wound was created, females showed better results.

**Keywords:** Wound healing, Tea tree oil, burn wound, infected wound, Methicillin Resistant Staphylococcus aureus

# P166 - 779: INVESTIGATING THE RESTORATIVE AND ANTIBACTERIAL EFFECTS OF HONEY, ROYAL JELLY AND PROPOLIS ON MALE WISTAR SKIN BURNS.

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**Background and Aim:** As a result of various accidents, thousands of people annually suffer burns around the world. Even today, most of the treatment regimens for burn patients in many hospitals consist of different antimicrobial drugs.

**Methods:** This study was performed on 50 male rats. After anesthesia, experimental square burns (2 × 2 cm2) were induced on each animalstreatment group a received honey, treatment group B received Royal Jelly, propolis extract was used for group C). Prednisolone silor ointment was used in group d, and control group was left untreated.

**Results:** The results indicated that honey and Royal jell are useful in healing wounds and regeneration time was significantly reduced relative to the control group.

**Conclusion:** according to the results of this study, honey and Royal jell can be used as a suitable alternative to chemical drugs used in treating burns. In this way, besides preventing the adverse side effects of synthetic drugs, it is possible to reduce the High costs of treating burn patients.

**Keywords:** Regeneration effects, honey, Royal Jell, propolis, burn wounds, Pseudomonas aeruginosa

# P167 - 785: EVALUATION OF B-LACTAMASE GENES OF BLA IMP, BLA VIM IN PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM EDUCATIONAL HOSPITALS OF ZAHEDAN

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**Background and Aim:** Pseudomonas aeruginosa is one of the main causes of nosocomial Infections. The drug's resistance to pseudomonads is increasing day by day, so the ability of this organism to gain resistance to an antibiotic is Important and drug resistance testing seems necessary prior to administration. The purpose of this study was to investigate the antibiotic resistance status of P .aeruginosa strains isolated from clinical specimens of patients in Zahedan hospitals and also to determine the frequency of β-lactamase genes of IMP and VIM strains.

**Methods:** The study was a cross-sectional study. A total of 125 isolates of P. aeruginosa were collected from hospitals in Zahedan for 5 months by simple sampling. Sensitivity to antimicrobial agents was performed by disk diffusion method. ESBLs producing strains were identified using a combined disk test, and screened for the presence of beta-lactamase genes (IMP and VIM) by PCR reaction.

**Results:** The method of ESBLs and Antibiotic resistance is high in Zahedan hospitals. The results show that most of the samples are resistant to the drug and among the strains producing ESBLs, the frequency of VIM genes was found to be higher than that of IMP.

**Conclusion:** I can be able to isolate the isolated resistance of Antibiotics and β-lactamase, which will help prevent infection of Anthropatic gland.

**Keywords:** ESBLs, Pseudomonas aeruginosa, burn, IMP gene, VIM gene

# P168 - 786: THE EFFECT OF COMMON ANTIBIOTICS ACCORDING TO CLSI STANDARD FOR RESISTANCE AND MICROBIAL SUSCEPTIBILITY TESTING OF CLINICAL PSEUDOMONAS AERUGINOSA STRAINS

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**Background and Aim:** Pseudomonas aeruginosa is an unpotent and opportunistic gram negative bacterium, which causes 10 to 15 percent of nosocomial infections and burns in the world. This bacterium is resistant to various Antibiotics by various mechanisms. The aim of this study was to evaluate the resistance of Clinical strains of P. aeruginosa to common Antibiotics.

**Methods:** In this descriptive-analytical study, 125 isolates of P. aeruginosa were collected from standard hospitals of Zahedan from February 1395 to July 1396 using standard laboratory methods. The Antibiotic susceptibility pattern of all isolates against selected antibiotics was performed according to the CLSI recommendation standard disc agar diffusion method.

**Results:** The sensitivity and specificity of each bacterial strain was determined by comparing the CLSI standard to the Antibiotic susceptibility of Antibiotics and the MIC of Antibiotics using Microdilution broth method. The most resistant strains to the most commonly used antibiotics are Cefotaxime and Ceftriaxone, P.aeruginosa, respectively.

**Conclusion:** Antibiotic resistance is high in Zahedan hospitals and measures such as Antibiotic susceptibility testing, rational administration of Antibiotics and the control of predisposing factors are necessary.

**Keywords:** Antibiotic resistance, CLSI, Pseudomonas aeruginosa, Antibiogram

# P169 - 787: FREQUENCY OF BLA TEM AND BLA SHV GENES IN ESBLS PRODUCING PSEUDOMONAS AERUGINOSA STRAINS AND DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERN IN BURN WASTES OF ZAHEDAN CITY

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**Background and Aim:** Pseudomonas aeruginosa is an important role in the development of opportunistic bacteria among Gram-negative bacteria. One of the pseudomonas aeruginosa resistance pathways is beta-lactamase Enzyme production in beta-lactams, including β-lactamase beta-lactamase due to blaTEM gene and blaSHV. The goal of determining the prevalence of genes in the population can be to control the pattern of resistance.

**Methods:** A cross-sectional descriptive-analytical study was performed on 125 P. aeruginosa burn wounds from patients admitted to Zahedan hospitals and identified by common biochemical methods. Genotypes of TEM and SHV beta-lactamase genes were investigated in PCR strains.

**Results:** According to the results of this study, in comparison with other studies, the resistance to Antibiotics used in the treatment of patients with Pseudomonas aeruginosa infections, especially cephalosporins, is Expanding in our Country. In this study, more than 80% of P.aeruginosa isolates were resistant to Ceftazidime, Cefipime, Ceftriaxone, Cefotaxime, Ticarcillin, and the frequency of ESBLs producing Pseudomonas aeruginosa was 32%, which indicates an increase in the prevalence of these resistant Enzymes.

**Conclusion:** I can be able to isolate the isolated resistance of Antibiotics and β-lactamase, which will help prevent infection of Anthropatic gland.

**Keywords:** Pseudomonas aeruginosa, SHV gene, TEM gene, Antibiotic resistance

# P170 - 788: DETERMINATION OF MIC IN CLINICAL ISOLATES OF PSEUDOMONAS AERUGINOSA ISOLATED FROM PATIENTS ADMITTED TO EDUCATIONAL HOSPITALS IN ZAHEDAN (1395-96)

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**Background and Aim:** Hospital infections are considered as one of the major medical problems in developed and developing countries. The prevalence of Antibiotic-resistant Pseudomonas aeruginosa isolates has been found to be a problem for burn patients. The purpose of this study was to evaluate the susceptibility of Clinical isolates of Pseudomonas aeruginosa to conventional Antibiotics and to determine the minimum Antibiotic level in this bacterium.

**Methods:** In this descriptive-analytic study, 125 samples of patients admitted to Educational hospitals of Zahedan were taken and cultured. Suspected pseudomonas aeruginosa Colonies were identified by Conventional biochemical methods. To measure Antibiotic susceptibility of bacterial strains, two methods of disc diffusion and MIC of Antibiotics were performed by Agar dilution method.

**Results:** In this study, from a total of 125 Pseudomonas aeruginosa, resistance to Antibiotics such as Imipenem, Tetracycline, Cefotaxime, Ceftazidime, Ceftriaxone, Levofloxacin, Ciprofloxacin, Gentamicin, Carbonylcyne and Streptomycin was 88%, 93%, 98%, 89%, 97 %, 89 %, 81 %, 78 %, %, and 91 % respectively.

**Conclusion:** Compared with other studies, the resistance in most Antidiabetic agents was similar to that of resistance in other areas. Amikacin was the most effective Antibiosis.

**Keywords:** MIC, Pseudomonas aeruginosa, burn

# P171 - 792: ANTIBACTERIAL ACTIVITY OF METHANOLIC PUNICA GRANATUM (POMEGRANATE) PEEL EXTRACT AGAINST ORAL BACTERIA

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**Background and Aim:** Medical herbs with anti microbial activity have always been important in traditional medicine and might be useful in the control of adherence of different bacteria in the oral cavity. Thus, search of effective Medical herbs for this control, reducing pathogenic dental bacteria are necessary. The aim of this study was to determine the antibacterial activity of methanolic extract from peel of Punica granatum (Pomegranate) against some oral bacteria in vitro.

**Methods:** At first a sample of methanolic extract of peel of Punica granatum was prepare in three different concentrations at 4 mg/ml, 8 mg/ml, 12 mg/ml and then its antibacterial activity against 5 standard strain bacteria (Lactobacillus acidophilus, Streptococcus mutans, Strep. salivarius Strep. sanguis and Strep. mitis) was tested for the determination of MIC (minimum inhibitory concentration) using well diffusion and agar serial dilution assays. Also the antibacterial activity of Vancomycin antibiotic was tested by the disk diffusion method.

**Results:** Statistical methods were using to analyze the data. The results demonstrated that the Punica granatum methanolic extract been effective against all of the 5 standard strain bacteria. The MIC for L. acidophilus, Strep. mutans and Strep. salivarius were 8 mg/ml. Strep. mutans was sensitive to Vancomycin.

**Conclusion:** This study demonstrates that a methanolic extract of Punica granatum have excellent anti bacterial activity against the 5 standard strain oral bacteria. These results suggest that pomegranate methanolic extract might be useful in the control of adherence of different bacteria in the oral cavity. Further investigations will be necessary.

**Keywords:** Oral bacteria, Antibacterial activity, Punica granatum

# P172 - 795: ISOLATION OF ATOPOBIUM VAGINAE FROM PATIENTS WITH VAGINOSIS IN TONEKABON COUNTY

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**Background and Aim:** Atopobium vaginae is an anaerobic, gram positive coccobacillus as a causative agent of bacterial vaginosis. The presence of this bacterium has been demonstrated to serve as a useful diagnostic marker. Vaginosis is a complicated polymicrobial syndrome associated with the collapse of the balance of vaginal microbial normal flora and the reduction of Lactobacilli and the replacement of anaerobic bacteria, with funky vaginal discharge and vaginal itching. In this research the diagnosis of Atopobium vaginae was done by cultivation and molecular methods (PCR) to separate bacteria in patients with vaginosis.

**Methods:** Hundred samples were taken from patients with vaginosis, and were transferred to the Trypticase soy agar culture medium with 5% sheep blood and incubated anaerobically in 37°C for 48 hours. Colonies were cultivated again for purification purposes. Molecular analysis of isolates was carried by PCR method after extraction of DNA from each sample. The sequence of positive samples were determined for final confirmation.

**Results:** Results of the cultivation were showed 30 samples of gram-positive bacilli, 10 samples of gram-positive coccobacilli. Through the molecular analysis of isolates with PCR, 10 sampls were recognised as A.vaginae. Positive samples were confirmed ultimately after their sequencing were determined.

**Conclusion:** Bacterial vaginosis has been of interest to physicians due to the consequences of preterm labor and pelvic inflammatory diseases and one of the major factors in causing this disease is Atopobium vaginae. PCR techniques based on amplification of 16s rRNA with culture method, are appropriate for diagnosis of Atopobium vaginae, and applications of these methods recommend simultaneously.

**Keywords:** Atopobium vaginae, Patient, Vaginosis

# P173 - 797: COMBINATION THERAPY OF FLUCONAZOLE/AMPHOTERICIN B AGAINST FLUCONAZOLE RESISTANT CANDIDA ALBICANS

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**Background and Aim:** Increasing incidence of resistance to conventional antifungal therapy has demanded that novel therapies be introduced. Recent in vitro studies have shown that combinations involving azoles and Macrolide polyenes may be effective in inhibiting fluconazole-resistant fungi. In this cross sectional study, we were aimed to evaluate the antifungal activity of fluconazole and amphotericin B alone and in combination against isolated of fluconazole-resistant Candida albicans.

**Methods:** Ten clinical isolates of fluconazole-resistant Candida albicans were identified from the immunocompromised patients and Candida albicans ATCC 10231 and CBS 5982 as a reference quality-control strain were employed. Antifungal susceptibilities were performed using the CLSI standard reference method (M27-A3) for broth microdilution antifungal susceptibility testing of yeasts.

**Results:** The favorable results showed synergic activity in combination of fluconazole with amphotericin B in Candida isolates studied, with fractional inhibitory concentration index (FICI) <0.5. Fifty-eight percent of resistant isolates were treated by fluconazole / amphotericin B were able to show complete or partial synergistic effects. Twenty-five and Seventeen percent of the resistant isolates presented different and additive effects respectively, while antagonism effects was not observed.

**Conclusion:** Our results demonstrated that the combination therapy with fluconazole and amphotericin B is not antagonistic in vitro and would be worth exploring in the treatment of candidiasis. Consequently, suggest that combination therapy should be considered in the management of clinical candidiasis.

**Keywords:** Candida albicans, combination

# P174 - 798: THE ANTIFUNGAL INFLUENCE OF FLUCONAZOLE AND AMPHOTERICIN B IN COMBINATION AND SINGLY ON THE HWP1 GENE EXPRESSION OF FLUCONAZOLE- RESISTANT CANDIDA ALBICANS BIOFILM

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**Background and Aim:** Candidiasis is a term describing infections by yeasts from the genus Candida, the majority Candida albicans. The biofilm formation has caused drug resistance in Candida albicans.

**Methods:** In this study, 100 clinical samples of fluconazole- resistant Candida albicans was isolated from immunocompromised patients. Antifungal activity of fluconazole and amphotericin B were evaluated and compared singly and in combination with disk diffusion agar and broth microdilution methods. Moreover, the amount of inhibited biofilm in the presence of the most effective drug was investigated by crystal violet colorimetry method and finally, the relative quantity of the proprietary gene expression of HWP1 was assessed via semi-quantitative RT-PCR.

**Results:** Our findings showed that fluconazole in all concentrations tested has had no significant difference in change of the gene expression ($P>0.05$). This issue has also been discussed about amphotericin B and the data have indicated the lack of the drug effectiveness as a single dose on the studied gene ($P>0.05$). About the pharmaceutical composition of fluconazole/amphotericin B, a remarkable and significant decrease of HWP1 gene expression has been observed and collaborated in all tested concentrations ($P<0.05$). Indeed, the combination of fluconazole and amphotericin B could significantly reduce the expression of HWP1 of Candida in all concentrations tested ranging from 3.69 to 7.92-fold.

**Conclusion:** This study was undertaken with the ultimate goal of finding the probable targets of fluconazole/ amphotericin B in Candida albicans by looking at its effects on biofilm formation.

**Keywords:** Candida albicans, HWP1, biofilm, crystal violet, RT-PCR

# P175 - 800: ANTIMICROBIAL RESISTANT PATTERN IN UROPATHOGENIC ESCERICHIA COLI STRAIN ISOLATED FROM INPATIENT IN AL-ZAHRA HOSPITAL IRAN-ISFAHAN

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**Background and Aim:** Our aim was conducted to determine distribution and antimicrobial susceptibility pattern among uropathogenic Escerichia coli isolated from patient at AL-Zahra hospital to establish local guideline on treatment of hospital acquired - urinary tract infection.

**Methods:** Positive urine culture taken from inpatient in hospital during six months. Their identification were done basis on gram staining, colony morphology and biochemical testing. Sensitivity testing was done for Cefepim, Ciprofloxacin, Ceftazidime, Amikacin & Meropenem by Kirby Bauer disk diffusion following CLSI. Isolated resistant to 3th generation cephalosporins were tested for ESBL production by double disk synergy test method.

**Results:** Among 344 positive urine culture, E.coli was the most common aetiological agents (27%), followed by Enterococcus sp (19%), Klebsiella pneumonia (14%) and pseudomonas aeroginosa (10%). The data indicated least resistant to Meropenem (1.1%), Amikacin (1.1%) and higher resistant were observed against Ciprofloxacin (57.6%), Cefepime (47.3%) and Ceftzidime (45.7%). Furthermore 44% were ESBL producer. 2 case out of 94 case from urine expect to the MDR.

**Conclusion:** High levels of ESBL producers along with alarming rate of resistant to routine antibiotic like Ciprofloxacin, prevent use of these commonly used and useful for clinicians in order to improve the empiric treatment.

**Keywords:** Antimicrobial resistant, urinary tract infection, ESBL multi drug resistant

# P176 - 802: EVALUATION OF PREVALENCE AND ANTIMICROBIAL RESISTANCE PATTERN OF URINARY TRACT INFECTIONS IN THE EAST AZERBAIJAN PROVINCE OF IRAN

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**Background and Aim:** The purpose of this study was to identify the causative agents of Urinary tract infections as one of the most common bacterial infections and their resistance patterns to used antibiotics.

**Methods:** The current study was carried out on urine specimens retrieved from patients with urinary infections in the Central Laboratory of Tabriz University of Medical Sciences in 2013-14. After culture-based identification of isolates, antibiogram was conducted according to Clinical and Laboratory Standards Institute protocol.

**Results:** Out of 56,564 urine specimens, 3,205(5.7%) were positive in terms of urine culture, 77.3% belonged to women, and 22.7% belonged to men. Moreover, the results showed that Escherichia coli was the most common bacterium responsible for urinary infection. According to the obtained results of antibiogram test, most cases of bacterial resistance were respectively related to ampicillin (74.2%), cephalothine (68.1%), and cotrimoxazole (54%), and the most bacterial sensitivity belonged to Amikacin (79%), nitrofurantoin (77.8%), and gentamicin (74.5%), respectively.

**Conclusion:** This study showed that most of the bacteria isolated belonged to the family of gram negative bacilli. The antibiotic resistance pattern of microorganism is responsible for urinary infections in different regions. Comparing the results of the present study with previous studies carried out in this region and around the world showed an increasing trend. Therefore, it seems necessary to consume antibiotic drugs correctly and reasonably, and administer them based on antibiogram.

**Keywords:** Antimicrobial resistance, urinary tract infections, East Azerbaijan, Iran

# P177 - 804: PHENOTYPIC AND MOLECULAR CHARACTERIZATION OF RESISTANCE TO MACROLIDES, LINCOSAMIDES AND TYPE B STREPTOGRAMIN IN STAPHYLOCOCCI ISOLATES FROM SHIRAZ, IRAN

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**Background and Aim:** Resistance to macrolide, lincosamide, and streptogramin B (MLSB) antibiotics is mediated by erm and msrA genes in staphylococci. The expression of these genes can be lead to three phenotypes, constitutive (cMLSB), inducible (iMLSB), and MSB phenotype. The present study aimed to characterize the phenotypic and molecular profiles of MLSB resistance in clinical isolates of Staphylococcus aureus and coagulase-negative staphylococci (CoNS).

**Methods:** This cross-sectional study was performed on a total of 164 staphylococcal isolates (97 S. aureus and 67 CoNS) obtained from different clinical specimens from Nemazee teaching hospital in Shiraz, Iran. The antimicrobial susceptibility testing was determined by the disk diffusion method according to CLSI recommendations. The presence of femA, mecA, ermA, ermB, ermC, and msrA genes were detected by PCR.

**Results:** Overally, iMLSB phenotype was identified in 8 (4.9%) staphylococci isolates, 5 CoNS, and 3 S. aureus isolates. All of the inducible-resistant isolates were methicillin-resistant except one isolate. Only in one isolate iMLSB phenotype was due to harboring ermA gene and in 7 other isolates were due to the presence of ermC or msrA genes. Of 36 erythromycin-resistant S. aureus isolates, the frequency of ermA, ermB, ermC and msrA genes were 55.6%, 8.3%, 80.6%, and 30.6%, respectively. Moreover, of 51 erythromycin-resistant CoNS isolates the frequency of ermA, ermB, ermC and msrA genes were 11.8%, 2%, 70.6%, and 68.6%, respectively.

**Conclusion:** Despite the low prevalence of iMLSB phenotype, because of the high prevalence of erm genes, it was important to performing routine D-test to guide therapeutic approaches.

**Keywords:** Staphylococcus, Clindamycin, Inducible resistance, erm genes

# P178 - 810: ANTIMICROBIAL RESISTANCE OF ENTEROCOCCUS FAECALIS ISOLATED STRAINS FROM CLINICAL SAMPLES IN HOSPITALS AND HEALTH CENTERS OF BONAB CITY, IRAN

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**Background and Aim:** Enterococcus is an important and various group of bacteria causing disease in human being and animal. In two recent decades, Enterococcus has had extended resistance to some of antibiotics and this has caused complexities in infection treatment of these bacterial. This study aimed to determine multiple resistance in Enterococcus faecalis strains isolated from clinical samples in hospitals and health centers of Bonab City.

**Methods:** 241 Enterococcus samples were collected from hospitals and health centers of Bonab. Enterococcus species were identified by common standard phenotype and PCR methods. Susceptibility test to antibiotics was performed based on standard diffusion method CLSI. Drug resistance (MIC) was performed by E-test method on vancomycin-resistant samples.

**Results:** Of 241 isolate samples, 100 Enterococcus faecalis samples were identified. Susceptibility test results to antibiotics showed that Enterococcus faecalis had highest resistance to peniciline (83%), tetracycline (43%) and ciprofloxacin (41) and the highest susceptibility to linezolid (87%), Imipenem (85%) and Teicoplanin (70%). MIC for vancomycin-resistant samples was ranging 32 to 256 µg. Multiple drug phenotype (resistance to three or more than three antibiotic classes) was observed in 30 strains.

**Conclusion:** The resistance to some antibiotics and high resistance to vancomycin are considered in Enterococcus faecalis strains as the selection of good treatment for infections by Enterococcus is reduced.

**Keywords:** Enterococcus faecalis, vancomycin-resistance Enterococcus, Multiple drug resistance

# P179 - 811: ANTIBIOTIC RESISTANCE PATTERN AND PHYLOGENETIC GROUPS OF THE UROPATHOGENIC ESCHERICHIA COLI ISOLATES RECOVERED FROM THE URINARY CATHETERS OF THE HOSPITALIZED PATIENTS

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**Background and Aim:** Almost 80% of nosocomial urinary tract infections (UTIs) are due to catheterization. Catheter-associated UTI (CAUTI) is the main source of antibiotic resistant pathogens, and uropathogenic E. coli (UPEC) is the most prevalent causative bacteria. This study was conducted to evaluate phylogenetic groups and antibiotic resistance pattern (as two important properties of pathogenicity) of UPEC isolates collected from urinary catheters.

**Methods:** The UPEC isolates were recovered from the urinary catheters of the patients without UTI, from two referral hospitals during 1 year. Phylogenetic grouping was carried out using a multiplex PCR. Antibiotic susceptibility and extended spectrum beta-lactamase (ESBL) producing were tested by disc diffusion method. Multidrug resistance was determined based on a recent guideline. The presence of some resistance genes was examined by PCR assay.

**Results:** Thirty-eight percent of the isolates were UPEC, all of them were belonged to either B2 (62.5%) or D (37.5%) phylogenetic groups. The UPEC isolates showed a very high resistance to ciprofloxacin (80%) and the third-generation cephalosporines (72.5%). Seventy percent of the isolates were ESBL-producing and 90% of them were MDR. Meanwhile, the frequency of the resistance genes: ctxM, aacIV, sul1, shv, and qnrA in the isolates were 95%, 82.5%, 77.5%, 72.5%, and 45% respectively.

**Conclusion:** High resistance to fluoroquinolones and third-generation cephalosporins (as the first-line antibiotics against CAUTI), as well as high frequency of ESBL-producing and MDR UPEC isolates, are matters of great concern, probably as a consequence of indiscriminate use and availability of antibiotics, and should be considered in empirical therapy of CAUTIs.

**Keywords:** Catheter-Related Infections, Uropathogenic Escherichia. Coli, Bacterial drug resistance, Multiple drug resistance, beta-Lactam Resistance

# P180 - 818: HIGH PREVALENCE OF CLASS 1 INTEGRON AMONG CLINICAL ISOLATES OF PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM BURN PATIENTS IN TALEGHANI BURN HOSPITAL OF AHVAZ, IRAN

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**Background and Aim:** Pseudomonas aeruginosa as a major life-threatening nosocomial pathogen plays an important role in serious infections, especially in burn patients. In recent years due to the resistance of these microorganisms to a wide variety of antibacterial agents, treatment of their infections has been difficult. Integrons are one of the types of transposable elements that are responsible for development of bacterial resistance. The purpose of this study was to determine the frequency of class 1 and 2 integrons in P. aeruginosa strains isolated from burn patients.

**Methods:** In total 93 isolates of P. aeruginosa were collected from burn patients in a six months period. The isolates were initially identified by culture and standard biochemical tests. Then antibiotic susceptibility testing was performed using the disc diffusion method according to CLSI recommendations. PCR assay was performed for detection of int1 and int2 genes.

**Results:** The high antibiotic resistance were detected among the isolates in this study. According to the results from antimicrobial susceptibility testing, most isolates showed high resistance to gentamicin (94.6%) and ciprofioxacin (93.6%). Although, all the isolates were susceptible to colistin (100%). Based on the PCR results, 89(95.7%) isolates carried class 1 integron, but none of the isolates harboured class 2 integron.

**Conclusion:** The spread of antibiotic resistance genes through class 1 integron among P. aeruginosa strains is an increasing concern in treatment of nosocomial infections. A appropriate health program need for control and prevention of these genes spread.

**Keywords:** Pseudomonas aeruginosa, burn patients, antibiotic resistance, integron, PCR

# P181 - 821: HEAVY METAL AND ANTIBIOTIC RESISTANCE OF ACINETOBACTER SPP. ISOLATED FROM DIESEL FUEL POLLUTED SOIL

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**Background and Aim:** Heavy metals pollution of soil and wastewater is a global problem that threatens the environment and health. The present study was aimed to isolate and identify multiple metal/antibiotic resistant Acinetobacter spp. from diesel fuel polluted soil of Al-Dora, Baghdad, Iraq.

**Methods:** Initially a total of 24 bacterial cultures were isolated and identified up to genus level as Acinetobacter. Screening of heavy metals resistant Acinetobacter were conducted by streaking the isolates on nutrient agar plates supplemented with different concentrations of the three heavy metals; Hg2+, Cd2+ and Pb2+. Kirby-Bauer disc diffusion method against 12 different antibiotics was used for antibiotic resistance patterns determination.

**Results:** Out of 24 isolates, 6 (25 %) isolates were selected as a multiple heavy metal resistant (MHMR) Acinetobacter with maximum tolerable concentrations (MTCs); 100–200 mg/L for Hg2+, 300-600 mg/L for Cd2+ and 100–300 mg/L for Pb2+. Antibiotic resistance patterns of the selected MHMR isolates revealed that 4 isolates were multidrug resistance (MDR) with varying degrees. Among them, one isolate showed a wide range of resistance to all tested antibiotics except Levofloxacin and Imipenem. It was found there's a positive relationship between antibiotic resistance and heavy metal tolerance among Acinetobacter spp. isolated from polluted soil.

**Conclusion:** The ability of Acinetobacter spp. to resist both metals and antibiotics could be regarded as a serious danger to health because of the ability of these bacteria to pass these resistant genes into the surrounding wild type microbial cells thereby complicating treatment.

**Keywords:** Acinetobacter, soil, multiple metal/antibiotics resistance

# P182 - 822: ISOLATION AND ANTIBIOTIC RESISTANCE PATTERN OF SALMONELLA TYPHIMURIUM AMONG NEONATAL CALVES WITH DIARRHEA IN HAMEDAN REGION

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**Background and Aim:** Neonatal calf diarrhea is a major cause of morbidity and mortality in the calves, approximately 50% of deaths in one-month-old calves have been attributed to diarrhea caused by bacterial, viral or parasitic pathogens, and has a large impact on the economy of dairy farms. Salmonella typhimurium, as a zoonotic pathogen, can be found in a large percentage of neonatal calves with diarrhea. The aim of this study was to isolate S. typhimurium and determine its resistance to antibiotics from neonatal calves with diarrhea in Hamedan region.

**Methods:** We collected fecal samples from 74 diarrheic calves up to 3 months of age in an 12 month period of time. Stool culture and standard biochemical test were conducted. Serotyping was done with the biomerieux serotyping kit and in this way S. typhimurium was isolated. The antibiotic susceptibility pattern of the S. typhimurium was determined by the disc diffusion method according to the CLSI guideline for ampicillin, ceftriaxone, ciprofloxacin, gentamicin, chloramphenicol and nalidixic acid.

**Results:** Of 19 Salmonella isolates, 7 (36.84%) isolates were identified as S. typhimurium. The overall rate of resistance among the 7 S. typhimurium isolates was 85.71% to nalidixic acid, 71.42% to ampicillin, 57.14% to cotrimoxazole, 28.57% to chloramphenicol and ciprofloxacin. No isolates were resistant to gentamicin and ceftriaxone.

**Conclusion:** Investigating the prevalence and antimicrobial resistance of Salmonella from cattle in dairy farms is of paramount importance to design methods of minimizing the possible transmission of Salmonella between humans and cattle.

**Keywords:** Salmonella typhimurium, Cattle, Drug resistance, Prevalence

# P183 - 843: ASSESSMENT OF ANTIBIOTIC RESISTANCE OF STAPHYLOCOCCUS SPECIES ISOLATED OF INTENSIVE CARE UNIT (ICU) OF EMDAD HOSPITAL IN SABZEVAR

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**Background and Aim:** Staphylococcus species are increasingly resistant nosocomial pathogens and Nosocomial infections are one of main causative agents of mortality among hospital patients particularly in Intensive Care Units (ICU). The emergence of antibiotic-resistant Staphylococcus strains has brought about several problems in the treatment of the infections caused by Staphylococcus strains. Hence, the aim of this study was to detect antibiotic resistance of Staphylococcus aureus and coagulase-negative staphylococci isolated of Intensive Care Unit (ICU) of Emdad Hospital in Sabzevar to current antibiotics.

**Methods:** In this study, 220 specimens were collected from different parts of ICU of Emdad Hospital. The samples were cultured on blood agar and staphylococci were identified by differential and biochemical tests. Antibiotic resistance of Staphylococcus strains was assessed by antibiogram and disk diffusion, in accordance with CLSI standards. Qualitative control was performed by staphylococcus aureus ATCC12600 and data were analyzed using SPSS.

**Results:** The findings of this study, 42 samples were coagulase-negative staphylococci and 23 samples were Staphylococcus aureus. Based on antibiogram, Trimethoprim Sulfamethoxazole, Vancomycine and Amikacin were the most effective antimicrobial drugs. Also, Ampicillin, Ceftazidime and Penicilln were the low effective antimicrobial drugs on the coagulase-negative staphylococci and Staphylococcus aureus and Thirty percent coagulase-negative staphylococci had intermediate resistance to Vancomycin.

**Conclusion:** Our findings show that the intensive care unit of Emdad hospital has relatively high nosocomial infection. With due regard to the differences in antibiotics sensitivity and resistance rate in different strains, evaluation of antibiotic resistance is necessary for treatment of microbial infections.

**Keywords:** Intensive Care Unit, Nosocomial infections, Antibiotic resistance, Staphylococcus aureus, Coagulase-negative staphylococci

# P184 - 845: EVALUATION OF ANTIBACTERIAL ACTIVITY OF ETHANOL EXTRACT OF LAVANDULA STOECHAS L. PLANT ON ANTIBIOTIC-RESISTANT STRAINS OF ESCHERICHIA COLI

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**Background and Aim:** Infections caused by antibiotic-resistant strains of Escherichia coli are mainly hospital-based prevalence is increasing in many countries; Hence efforts taken to find new compounds as an alternative to antibiotics. Therefore, this study is done to evaluate the antimicrobial effects of ethanol extract of lavandula stoechas L.. plant on clinical resistant E.coli.

**Methods:** After collecting plants and validate its scientific name by botanists of Agricultural Organization and after drying in shade, extract of lavandula stoechas L. plant , was extracted by vacum distlllation method and different concentrations of the extracts were prepared. Then, the MIC and MBC of the extracts on E.coli strains that isolated from patients, was determined by broth dilution and agar well diffusion.

**Results:** The results showed that the MIC and MBC of ethanol extract of lavandula stoechas L. plant on E.coli were 6.5 and 13 mg/ml.

**Conclusion:** The results of this study show that can be taken lavandula stoechas L. plant in herbals groups with antibacterial properties and after evaluating their effects in vivo condition and to identify the active ingredients, as an alternative to synthetic drugs that commonly used to treat infections are used.

**Keywords:** Antibacterial effects, Extract, E.coli

# P185 - 850: INCREASING THE PRODUCTION OF CLAVULANIC ACID AND CHANGING THE PATTERN OF CONSUMPTION OF ENZYMES IN THE STREPTOMYCES CLAVULIGERUS STRAIN BY ULTRAVIOLET RAY MUTAGENESIS

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**Background and Aim:** Streptomyces, germ-positive aerobic bacteria, are catalase-positive. Usually nitrate is reduced to nitrite: adenine, casein, and gelatin. Hypoxanthine, starch, and D-L-tyrosine. Different species of the genus Streptomyces produce a wide range of antibiotics. In those industries where the production of the product is dependent on microorganisms, the ability to produce and change in other genotypic indices, which leads to lower production costs, is increased. One of the most important physical mutational factors can be referred to as photovoltaic radiation. Usually, wavelengths of 200 to 300 nm are used. In this project, Streptomyces clavuligerus DSMZ 738 has been used to increase the production of clavulanic acid. To increase the production of clavulanic acid in this bacterium, the mutation method was used with UV radiation at a wavelength of 250 nm and the production rate was measured by HPLC method. The mutations produced from the strain of the parent in the ISP2 strain showed the following changes in production: 1. In terms of Gel-Cit-Trp-Odc-VP-Ind, increasing UV time and bacterial concentration did not affect the degradation of these enzymes. : As the UV time increases, the degradation property disappears. 3. In Lys: an increase of 20 minutes results in the return of the Lys degradation power but does not affect other times. 4. In terms of Onp: the degradation property disappears within 30 minutes.

**Methods:** HPLC method

**Results:** Increasing UV time and concentration of bacteria does not have an effect on enzyme degradation.

**Conclusion:** Especially commercial antibiotic, clavulanic acid.

**Keywords:** Actinomycetes, antibiotics, clavulanic acid, mutagenesis, Streptomyces clavuligerus

# P186 - 856: ANTIBIOTIC RESISTANCE STUDY OF PSEUDOMONAS AERUGINOSA, A BIOFILM PRODUCER ISOLATED FROM BURN WOUNDS, GUILAN BURN CENTER

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1. The original
2. Corresponding

**Background and Aim:** Biofilm formation is considered as a main problem in infection control. Due to recent investigations, Pseudomonas aeruginosa is considered as a major cause of hospital-acquired infections due to its high antibacterial resistance. Biofilm formation is a well-known pathogenic mechanism in P. aeruginosa infections, since sessile bacteria are protected in an extracellular matrix of exopolysaccharide. The aim of the present study was to assess biofilm formation and antibiotic resistance among P. aeruginosa isolates obtained from burnwound in a burn center in Guilan, Iran.

**Methods:** Forty isolates of P. aeruginosa were obtained from burn wound of a burn center. The P. aeruginosa isolates were identified using standard bacteriological procedures. Drug susceptibility test was performed by disk diffusion method for all the isolates against eight antimicrobial agents. Biofilm formation was measured by microtiter plate assay.

**Results:** Of the50 isolates, 30 (75%) were biofilm producers and 10(25%)were non-biofilm producers. Biofilm producers have been more resistance to most antibiotics than non-producer groups. On the other hand, resistance to gentamicin, imipenem, tobramycin, piperacillin and ciprofloxacin was significantly higher among the biofilm-producing isolates than the non-producing ones ($P < 0.05$).

**Conclusion:** The findings of the present study well demonstrated that the P. aeruginosa biofilm-producing isolates were more resistant to the tested antibiotics.

**Keywords:** Biofilms, Antimicrobial Drug Resistance, Burn Units, Pseudomonas aeruginosa

# P187 - 872: EVALUATION OF ANTIBACTERIAL ACTIVITY OF ETHANOL EXTRACT OF CICHORIUM INTYBUS L. PLANT ON ANTIBIOTIC-RESISTANT STRAINS OF ESCHERICHIA COLI

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**Background and Aim:** Resistance to antibacterial agents and sensivity reaction to such chemical compounds are the main reasons for investigators to develop new antibiotics from herbal sources. Therefore, this study is done to evaluate the antimicrobial effects of ethanol extract of Cichorium Intybus L.. plant on clinical resistant Escerichia coli.

**Methods:** After collecting plants and validate its scientific name by botanists of Agricultural Organization and after drying in shade, extract of Cichorium Intybus L. plant , was extracted by vacuum distillation method and different concentrations of the extracts were prepared. Then, the MIC and MBC of the extracts on E. coli strains that isolated from patients, was determined by broth dilution and agar well diffusion.

**Results:** The results showed that the MIC and MBC of ethanol extract of Cichorium Intybus L. plant on E. coli were 6.5 and 13 mg/ml.

**Conclusion:**Since some of concentrations of the extracts showed significant antibacterial activity on given E. coli, more studies on the plant in future, provides more information regarding probable substitution of that for current antibiotics.

**Keywords:** Antibacterial effects, Extract, E. coli, Minimum Inhibition Concentration , Minimum Bactericidal Concentration

# P188 - 876: EVALUATION OF ANTIBACTERIAL ACTIVITY OF ETHANOLIC EXTRACT OF MALVA NEGLECTA AND ALTHAEA OFFICINALIS L. ON ANTIBIOTIC-RESISTANT STRAINS OF ESCHERICHIA COLI

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**Background and Aim:** With the increasing awareness of the dangerous effects of synthetic antibiotics, Demand for natural herbal drugs and cheap and without side effects has increased. The present study aims to investigate antibacterial effects of ethanolic extract of Malva neglecta and Althaea officinalis L. on antibiotic-resistant strains of Escerichia coli.

**Methods:** After collecting herbs and approval of its scientific name by botanists of Iranian Agriculture Organization, the extract of Malva neglecta and Althaea officinalis L were prepared by vacuum distillation procedure. Then Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) of the extracts was determined on E. coli. strains isolated from patients with broth micro dilution and Agar dilution method.

**Results:** Results showed that MIC and MBC of ethanolic extracts of Malva neglecta against E. coli.were 6.5 and 13 mg/ml and MIC and MBC of Althaea officinalis L. extract on E. coli.were 3.2 and 6.5 mg/ml.

**Conclusion:** These results indicated that Malva neglecta and Althaea officinalis L., could be considered as a group of herbs with antibacterial properties. Thus, it can be used widely in traditional medicine in this regard.

**Keywords:** Antibacterial effects, Malva neglecta, extracts, Althaea officinalis E. coli

# P189 - 877: MOLECULAR ANALYSIS OF CTX-M GENE PRODUCING THE BETA-LACTAMASE ENZYME IN KLEBSIELLA PNEUMONIAE ISOLATED FROM CLINICAL SPECIMEN OR PCR METHOD

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**Background and Aim:** Klebsiella pneumoniae is an opportunistic pathogen and one of the most important bacteria involved in hospital infections. It has a high mortality rate each year, and it causes various illnesses in hospitalized patients. The broad-spectrum beta-lactamases of CTX-M group known as an important mechanism of resistance throughout the world and it is rapidly increasing. The aim of this study is to determine the CTX-M gene in the strains of K.pneumoniae producing broad-spectrum beta-lactamases isolated from Tehran hospitals using PCR method.

**Methods:** This descriptive study selected 60 clinical specimens (urine, blood, sputum, bronchial tubes) from different hospitals in Tehran and identified them by biochemical assays. The antibiotic sensitivity test was performed by CLSI absolute disc diffusion and PCR assay for identification of beta-lactamase genes.

**Results:** In present study,The most strain of K.pneumoniae is for urine sample and the least for bronchial based on collected strains. The highest resistance level is for gentamicin and ciprofloxacin 65.1% and 61.14%, respectively and the highest sensitivity for amipene and amikacin antibiotics is 61.4% and 34.9%, respectively. In the PCR3 test, 13% of isolates were from the 60 strains of K. pneumoniae with CTX-M.

**Conclusion:** Uncontrolled and irregular consumption and prescribing of antibiotics should be avoided before antibiogram to prevent resistance to new drugs it is important to use a precise PCR molecular assay suitable for this pathogen.

**Keywords:** Klebsiella pneumoniae, CTX-M, PCR

# P190 - 878: MOLECULAR STUDY OF EXTENDED-SPECTRUM BETA-LACTAMASE (TEM-1) GENE IN ESCHERICHIA COLI ISOLATES COLLECTED, FROM RAZI HOSPITAL IN MARAND

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**Background and Aim:** Emergence of antibiotic resistance is one of problems in microbial infection control. These types of enzymes can lead to resistances against the third generation Cephalosporins and hydrolysis of Monobactams. This study was conducted to evaluate antibiotic sensitivity profiles and the precence of blaTEM gene in E. coli isolates collected from clinical specimens of Razi Hospital in Marand.

**Methods:** 70 isolates Escerichia coli were detected by using conventional bacteriologic tests and then antibniotic sensitivity tests were performed according to Kirby-Bauer method. Confirmatory test was also performed by Combind disk test method. Finally blaTEM gene was detected by using PCR technique.

**Results:** Of the 70 isolates of Escherichia coli, 18 (25.71%) isolates produced broad-spectrum beta-lactamases, of which 15 (21.42%) had beta-lactamase TEM_1 genes.High resistance of E. coli isolates to the third generation Cephalosporins underlines need for accurate sensitivity tests, also avoidance from inappropriate use of antibiotics.

**Conclusion:** High resistance of E. coli isolates to the Beta-lactam antibiotics underlines need for accurate sensitivity tests, also avoidance from inappropriate use of antibiotics.

**Keywords:** Extended-Spectrum Beta-Lactamases (ESBLs), blaTEM gene, Escherichia coli , Polymrase Chain Reaction (PCR)

# P191 - 879: SYNERGISTIC EFFECT OF MENTHA PIPERITA ESSENTIAL OIL AND IMIPENEM AGAINST PSEUDOMONAS AERUGINOSA BIOFILMS

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**Background and Aim:** Biofilms protect the pathogens from inhibitory effect of antibiotics and Pseudomonas aeruginosa is an important pathogen. Essential oils have recently seen renewed interest as antimicrobial agents for treating bacterial infections. The goal of this study was to assess the efficacy of Mentha piperita essential oil, alone and in combination with the imipenem to inhibit isolates of P. aeruginosa biofilms.

**Methods:** The biofilm formation ability against 50 clinically isolated P. aeruginosa was confirmed by microtiter plate method. M. piperita essential oil was extracted and The antibiofilm and antibacterial properties of it was studied both alone and in compound with imipenem by method of broth micro dilution and MIC of it was obtained. To study anti-microbe interactions between M. piperita essential oil and imipenem the method of checkerboard titration was used, and Fractional Inhibitory Concentration Index (FICI) was obtained.

**Results:** The biofilm formation ability by 15 clinical strains of P. aeruginosa was confirmed. The combination of M. piperita essential oil and imipenem significantly inhibited P. aeruginosa biofilm formation (ΣFBIC = 0.5).

**Conclusion:** Our study identifies that M. piperita essential oil in combination with the imipenem can be effectively used to control of P. aeruginosa biofilms. Indicating the importance of natural agents as potential antibiofilm and antimicrobial agents.

**Keywords:** Pseudomonas aeruginosa biofilms, Mentha piperita essential oil, imipenem, synergistic

# P192 - 880: MOLECULAR EVALUATION OF CTX-M-15 GENE IN ESCHERICHIA COLI ISOLATES IN MRAND TOWN

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**Background and Aim:** The prevalence of antibiotic resistance among extended-spectrum β-lactamase (ESBL)-producing E. coli has increased markedly in recent years. This could be attributed to association of multi drug resistance in ESBL producing isolates. The present study was aimed to determine the antimicrobial resistance profile of ESBL producing E. coli isolates from various clinical samples.

**Methods:** 100 clinical samples as urine, endotracheal, wound and blood were collected during 4 months from the patients referring to health centers laboratory of Marand. The isolates were identified by routine method. To identify antibiotic resistance, disc diffusion method was used and to determine frequency of CTX-M-15 gene products, phenotype and PCR methods by its specific primers were used.

**Results:** Among 70 isolates of E. coli, 20(20%) were isolates producing Extended Spectrum Beta Lactamases, of which (20%) had Beta Lactamases gene CTX-M-15. The highest resistance in E. coli was cefotaxime 20% and lowest resistance to imipenem 20% .

**Conclusion:** Based on high percent , accurate performance of Antibiogram and avoiding unduly prescription of antibiotics in infections of ESBL producer organism is an unavoidable necessity.

**Keywords:**Escherichia coli , Extended Spectrum Beta Lactamases, CTX-M-15

# P193 - 881: SYNERGISTIC EFFECT OF ROSMARINUSOFFICINALIS ANDCUMINUMCYMINUM ESSENTIAL OILS AGAINSTMULTIDRUG-RESISTANT PSEUDOMONAS AERUGINOSA ISOLATES

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**Background and Aim:** Pseudomonas aeruginosa is the cause of many infections in humans and is directly associated with an increase in antibiotic resistance. Despite the vast production of new antibiotics in the last three decades, resistance to these drugs by microorganisms has increased. The aim of this study was to investigate the effect synergic Rosmarinusofficinalis and Cuminumcyminumessential oils against multidrug- resistant Pseudomonas aeruginosa isolates.

**Methods:** First, 50 isolate of P. aeruginosa were collected from clinical samples and were identified by biochemical tests andto study their antibiotic susceptibility pattern by the Kirby-Bauer method. The R.officinalis and C.cyminumessential oilswere extracted characterized by GC-MS analysis. The minimum inhibitory concentration (MIC) and fractional inhibitory concentration index (FICI) were determined to confirm antibacterial susceptibility and synergistic effectsagainst multidrug- resistant P. aeruginosa isolates.

**Results:** Finding from antibioticsusceptibility test identified 30 isolates as multidrug- resistant P. aeruginosa. The results showed thatR. officinalis and C. cyminumessential oils possessed antibacterial effects and synergistic activities.

**Conclusion:** Combinations of the essential oils in this study showed synergic action against multidrug-resistant P. aeruginosa isolates which could be considered in medical industries as antimicrobial drug.

**Keywords:** Synergistic, Cuminumcyminum, Rosmarinusofficinalis, Pseudomonas aeruginosa

# P194 - 890: PREVALENCE OF QUINOLONE RESISTANCE GENES IN KLEBSIELLA PNEUMONIAE AND ESCHERICHIA COLI ISOLATES

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**Background and Aim:** The distribution of drug resistance among clinical isolates of Escherichia coli and Klebsiella pneumoniae, has limited the therapeutic options to treat infections caused by them. The aim of this study was to report the prevalence of quinolone resistance genes among E. coli and K. pneumonia strains isolated from hospitals of Tehran, Iran.

**Methods:** One hundred strains of E. coli from Labbafinejad and Taleghani Hospitals and One hundred strains of K. pneumoniae from Mofid Children and Taleghani Hospitals were collected between January 2013 and May 2014. Antimicrobial susceptibility tests were done by disk diffusion method based on CLSI guidelines. Detection of qep A, aac (6′)-Ib-cr, acr A and acr B genes was done by PCR.

**Results:** Fosfomycin and imipenem against clinical isolates of E. coli and fosfomycin and tigecycline against clinical isolates of K. pneumoniae had the best effect in antimicrobial susceptibility tests. PCR assay using specific primers demonstrated that the prevalence of qep A, aac (6?)-Ib-cr, acrA and acrB genes among the 100 E. coli isolates were 0(0%), 87(87%), 92(92%) and 84(84%), respectively. The prevalence of qep A, aac (6?)-Ib-cr, acr A and acr B genes among the 100 K. pneumoniae isolates were 4(4%), 85(85%), 94(94%) and 87(87%), respectively.

**Conclusion:** The prevalence of qep A, aac (6′)-Ib-cr, acr A and acr B resistance determinants in E. coli and K. pneumoniae is a great concern. Therefore, infection control and prevention of spread of drug-resistant bacteria needs careful management of medication and identification of resistant isolates.

**Keywords:** Escherichia coli, Klebsiella pneumonia, quinolone, Iran

# P195 - 894: ANTIBACTERIAL EFFECT OF ZATARIA MULTIFLORA ESSENTIAL OIL IN COMBINATION WITH CIPROFLOXACIN AGAINST BIOFILMS OF STAPHYLOCOCCUS AUREUS CLINICAL ISOLATES

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**Background and Aim:** Antibiotic resistance is documented to be a serious problem that affects the choice of appropriate antibiotic therapy. One of the proposed methods to cope with biofilm bacteria is the use of alternative antibacterial treatments, which include natural antimicrobial substances such as plant essential oils (EOs). The aim of this study was to investigate the antimicrobial activity of Zataria multiflora essential oil in combination with ciprofloxacin against biofilms of Staphylococcus aureus clinical isolates.

**Methods:** 45 Clinical isolates of S. aureus from various specimens having ability of biofilm formation were screen in this study, On the basis of their ability to attach to polymeric surfaces. Minimum biofilm inhibitory concentration (MBIC) of Z. multiflora essential oil and ciprofloxacin was estimated against the established biofilm on polystyrene microtiter plates. The synergism result was investigated by the comparison of fractional inhibitory concentration index (FICI).

**Results:** 15 isolates of S. aureus included in this study were able to produce a stable biofilm. The results indicated that Z. multiflora essential oil in combination with ciprofloxacin had antibiofilm activities.

**Conclusion:** Our study identifies that several plant extracts can be effectively used to control of S. aureus biofilms. Indicating the importance of natural agents as potential antibiofilm and antimicrobial agents.

**Keywords:** Zataria multiflora, ciprofloxacin, Staphylococcus aureus biofilms, synergic

# P196 - 895: RESISTANCE PATTERN OF BACILLUS CEREUS STRAINS ISOLATED FROM DAIRY PRODUCTS TO SELECTED ANTIMICROBIAL AGENTS

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**Background and Aim:** Due to the excessive use of antibiotics, antibiotic resistance is one of the major causes of failure in treatment of diseases. Bacillus cereus is a spore-forming bacterium which is resistant to wide range of antibiotics because of having S-layer on its surface and beta-lactamase. The aim of this study was to investigate the antibiotic resistance pattern of Bacillus cereus against some common antibiotics.

**Methods:** For this purpose, 32 isolates of B. cereus strains from dairy products were used for the evaluation of drug resistance against selected antibiotics including vancomycin, clindamycin, and gentamicin using Kirby-Bauer disc diffusion method. The rate of sensitivity and drug resistance was evaluated according to the CLSI standard method.

**Results:** The results of antibiogram test showed that 50, 31.25 and 12.5% of isolates were resistant to vancomycin and clindamycin and gentamicin, respectively. Also, 18.75% of isolates were semi-sensitive to vancomycin and clindamycin. 31.25, 50 and 87.5% of them were sensitive to vancomycin, clindamycin and gentamicin, respectively.

**Conclusion:** According to the findings of this study, B.cereus was highly resistant to vancomycin and clindamycin. So, the use of gentamicin is only recommended against Bacillus cereus.

**Keywords:** Drug resistance, Bacillus cereus, vancomycin, clindamycin, gentamicin

# P197 - 896: DISTRIBUTION OF QUINOLONE RESISTANCE GENES AMONG CLINICAL ISOLATES OF KLEBSIELLA PNEUMONIAE

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**Background and Aim:** Increasing emergence of resistance among clinical isolates of Klebsiella pneumoniae, has limited the therapeutic options to treat infections caused by these bacteria. Objectives: The aim of this study is molecular detection of quinolone resistance genes, acrA, acrB, aac(6′)-Ib-cr, and qepA in klebsiella pneumoniae strains isolated from hospitalized patients in selected hospitals in Tehran.

**Methods:** One hundred and seventeen strains of K. pneumoniae were isolated between August 2013 and March 2014 from hospitalized patients in Taleghani, Mofid Children and Imam Hossein Hospitals, Tehran. Antimicrobial susceptibility tests were done by disk diffusion and broth micro-dilution methods based on CLSI guidelines. Identification of genes encoding efflux pumps acrA, acrB, qepA and aac(6′)-Ib-cr was carried out by PCR technique.

**Results:** **A**ntimicrobial susceptibility tests showed that colistin and tigecycline had the best effect against clinical isolates of K. pneumoniae. PCR assay detected the acrA and acrB genes in 110(94%) and 102(87%) isolates, respectively. Also qepA and aac(6′)-Ib-cr genes in 5 (4%) and 100 (85%) isolates was detected, respectively.

**Conclusion:** The prevalence of acrA, acrB, aac(6′)-Ib-cr, and qepA genes in K. pneumoniae, which causes resistance to fluoroquinolones in this study is cause for concern .Based on our results, accurate identification of resistant gram negative bacteria such as K. pneumoniae and detection of its susceptibility to common antibiotic could leads to proper treatment and control of resistant nosocomial infections.

**Keywords:** Klebsiella pneumoniae, efflux pump, fluoroquinolone, antibiotic resistance

# P198 - 897: COMPARISON OF FLAGELLATED AND NON-FLAGELLATED BACTERIA RESISTANCE AGAINST CITRULLUS COLOCYNTHIS

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**Background and Aim:** Citrullus colocynthis is an annual herbaceous plant which is widely known for its antitumor, antifungal and antibacterial properties. Previous studies proved the antifungal activity of the C. colocynthis against the filamentous fungal strains. The present study aimed to evaluate whether flagellated bacteria were susceptible to fruit pulp ethanolic extract of this plant more than non-flagellated strains.

**Methods:** Muller-Hinton agar plates were swabbed with a 0.5 McFarland turbidity standard of Pseudomonas aeruginosa (ATCC 27853) and Salmonella Typhimurium (ATCC 14028) as flagellated bacteria and also Bacillus cereus (ATCC 11778) and Staphylococcus aureus (ATCC 29737) as non-flagellated bacteria. 100µL of the filter sterilized dissolved extract in DMSO (Dimethyl sulfoxide) (20 mg mL-1) and control were added into the 6mm diameter cork bored wells. The inhibition zones were measured after incubation (37ºC, 24h) by calipers. Experiments were repeated in triplicate. One-way ANOVA ($P<0.05$) was used to analyze the inhibition zones (Tukey HSD's post-hoc test).

**Results:** Fruit pulp ethanolic extract of C. colocynthis exhibited anti-Staphylococcus aureus (20.3±0.5) and anti-Bacillus cereus (18.7±1.5) inhibition zones which was significantly higher than the inhibition zones of two other flagellated bacteria Pseudomonas aeruginosa (15.3±0.5) and Salmonella Typhimurium (18.3±1.5).

**Conclusion:** Present study suggested that the inhibitory effect exhibited by the extract of C. colocynthis may not be attributable to the flagella.

**Keywords:** Citrullus colocynthis, Flagella, Antibacterial

## P199 - 899: ANTIMICROBIAL EFFICIENCY OF CITRULLUS COLOCYNTHIS

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**Background and Aim:** Citrullus colocynthis is an important medicinal plant of family Cucurbitaceae. The purpose of this paper was to identify the most sensitive and the most resistance bacteria to C. colocynthis fruit pulp ethanolic extract.

**Methods:** Two different concentrations of the extract in DMSO (Dimethyl Sulphoxside) (5 and 20 mg mL-1) were prepared and filter sterilized. Muller Hinton agar plates were uniformly swabbed with Pseudomonas aeruginosa (ATCC 27853), Salmonella Typhimurium (ATCC 14028), Bacillus cereus (ATCC 11778), Escherichia coli (ATCC 25922) and Staphylococcus aureus (ATCC 29737) suspensions (0.5 McFarland). 100µL of the extract and control were added after preparation to the 6mm diameter cork bored wells. The antibacterial activity was expressed as the mean of inhibition diameters (mm) produced after incubation (37ºC, 24h). Experiments were repeated in triplicate. One-way ANOVA ($P<0.05$) was used to analyze the differences between inhibition zones (Tukey HSD's post-hoc test).

**Results:** 5 mg mL-1 extract exhibited the highest antibacterial activity against Bacillus cereus (14.6±0.5) whilst this concentration had no effect on Staphylococcus aureus (0.0±0). Lowest inhibition diameter in 20 mg/ml extract was against Pseudomonas aeruginosa (15.3±0.5).

**Conclusion:** It was concluded that Bacillus cereus (gram positive) was the most sensitive and Pseudomonas aeruginosa (gram negative) was the most resistance to antibacterial activity of C. colocynthis.

**Keywords:** Citrullus colocynthis, Antibacterial, Sensitive, Resistance

# P200 - 905: COMPARISON OF ANTIBIOTIC RESISTANCE PATTERNS OF PSEUDOMONAS AERUGINOSA IN HUMAN AND BOVINE ISOLATES

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**Background and Aim:** The emergence of multidrug resistant isolates of Pseudomonas aeruginosa has become a growing problem in threatment of infectious disease. The aim of this study was to assess the antibiotic resistant patterns of P. aeruginosa in patients with different infections and also in cattle with mastitis for effective treatment.

**Methods:** A total of 45 P.aeruginosa isolates from bovine mastitis and 48 isolates from patients with different infections were tested. Antibiotic susceptibility testing was performed by disk diffusion method for15 antibiotics: Gentamicin (GM ), Cefazolin (CZ), Kanamycin (K ), Ceftriaxone (CRO ), Amoxicillin&clavulanic acid (AUG), Ampicillin(AP), Nalidixic acid (NA), Trimethoprimsulfamethoxazole (TS),Levofloxacin (LEV), Tetracycline (T ), Cephalothin (KF ), Ciprofloxacin (CIP ),Oxacillin (OX ), Aztreonam ( ATM), Enrofloxacin(ENF).

**Results:** The most resistant antibiotic included AUG (100%), CZ(100%), and KF( 100% ) in isolates from mastitis and OX(100%) and AP(100%) in human isolates.The number of 6 different patterns of antibiotic resistance for animal isolates and 9 different patterns for human isolates were found.

**Conclusion:** Emerging multi-drug resistant strains of P.aeruginosa are potentially due to improper use of antibiotics leading to ineffective therapy and in turn, appearance of even more resistant strains. Antimicrobial surveillance should be done periodically to monitor the current resistance patterns.

**Keywords:** Antibiotic resistance, Pseudomonas aeroginosa, human, Bovine mastitis

# P201 - 906: DETECTION OF MEXA AND MEXB EFFLUX GENES IN MULTIDRUG-RESISTANT ISOLATES OF PSEUDOMONAS AERUGINOSA BY MULTIPLEX PCR

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic bacterium that is resistant to different antimicrobial compounds. Many factors are associated with the antibiotic resistance of P. aeruginosa, such as efflux pump. The aim of this study was the molecular detection of mexA and mexB genes in isolates from bovine mastitis.

**Methods:** A total of 45 P. aeruginosa isolates from bovine mastitis were used. The isolates were identified based on biochemical tests and confirmed with species-specific primers. These isolates defined as multidrug-resistant (MDR) by using drug susceptibility testing. The presence of mexA and mexB genes were investigated using multiplex PCR.

**Results:** According to the results mexA gene was found in 39 of MDR isolates (86.6%) and 12 of MDR isolates (26.6%) had mexB gene.

**Conclusion:** Extremely high-level antibiotic resistance in isolates from mastitis correlates with the presence of efflux pump genes as a major cause of resistance. The presence of such these genes is very important for suggestion of an effective treatment model for the cattle having mastitis.

**Keywords:** Multidrug-resistant, P. aeruginosa, Efflux pump

# P202 - 907: INVESTIGATION OF ANTIBACTERIAL EFFECTS OF FERULA GUMMOSA ON VANCOMYCIN-RESISTANT ENTEROCOCCUS FAECIUM AND ENTEROCOCCUS FAECALIS STRAINS

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**Background and Aim:** Enterococcus faecalis and Enterococcus faecium are the most prevalent species cultured from humans, accounting for more than 90% of clinical isolates. They have both an intrinsic and acquired resistance to antibiotics, making them important nosocomial pathogens. Isolation of Enterococci resistant to multiple antibiotics has become increasingly common in the hospital setting. Multi-drug resistant (MDR) human pathogens are considered among the most significant health threatening problems worldwide. Utilization of new natural antibacterial compounds such as plant derived natural products has been recently achieved increasing attention. One of them is Ferula gummos which belongs to Umbelliferae family and has medicinal properties including antimicrobial, anti-inflammatory, antinociceptive, anticonvulsant, antispasmodic and antioxidant activities. F. gummosa has biologically active compounds making it a potent antibacterial candidate. The aim of current study was evaluation of antibacterial activities of F. gummosa on vancomycin-resistant Enterococcus faecium and E. faecalis strains.

**Methods:** To evaluate the antibacterial activities of Ferula gummosa essential oils, disk diffusion testing and minimum inhibitory concentration (MIC) was performed.

**Results:** F. gummosa is a rich source of novel bioactive molecules with significant antimicrobial effects. The results indicated that F. gummosa extract could inhibit visible growth of E. faecium and E. faecium.

**Conclusion:** F. gummosa extract has well-known antimicrobial effects and can utilize as novel antimicrobial compounds and enforce strategies for treatment and control of antibiotic resistance in bacteria.

**Keywords:** Ferula gummosa, Antibacterial Activities, Enterococcus faecalis, Enterococcus faecium, Iran

# P203 - 911: IDENTIFICATION OF CLINICAL ANTIBIOTIC RESISTANCE GENES AMONG METHICILLIN RESISTANCE STAPHYLOCOCCUS AUREUS STRAINS BY MULTIPLEX-PCR

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**Background and Aim:** Staphylococcus aureus is an important human pathogen which can cause a broad spectrum of diseases including minor skin disease to more severe and aggressive infections. In the present study, a Multiplex-PCR assay for the detection of antibiotic resistance genes among S. aureus clinical isolates was described.

**Methods:** Number of 115 S. aureus isolates were collected from clinical specimens at three teaching hospitals in Ahwaz, Iran. Screening for methicillin and mupirocin resistance in staphylococcal isolates was performed by disk diffusion method, according to Clinical and Laboratory Standards Institute (CLSI) guidelines. The presence of mecA,femA, and Mup genes was investigated by multiplex-PCR.

**Results:** MRSA strains isolated from staff and patients are 72.5% and 73% respectively. Mupirocin-resistant Staphylococcus aureus strains in patients and staff were 6.3% and 27% respectively. The percentage of mupirocin resistance aureus strains isolated from personnel was 4 times the strains that isolated from patients. Thirteen percent of resistant Staphylococcus aureus strains were resistant to methicillin and mupirocin (MMRSA) simultaneously.

**Conclusion:** The close relationship between the staff and patients and the possibility of transferring of the strains to the burn and susceptible patients, confute more attention to health points in these hospitals. The PCR assay described in this study was able detect three genes for identification of S. aureus and its methicillin and mupirocin resistant genotypes concomitantly in a single reaction. Hence, this method can be used on regular basis as a valuable diagnostic and surveillance tool in clinical laboratories.

**Keywords:** Disk diffusion, Methicillin resistance, Multiplex PCR, Staphylococcus aureus

# P204 - 912: PREVALENCE OF METHICILLIN- RESISTANCE AMONG CLINICAL ISOLATES OF STAPHYLOCOCCUS AUREUS BY PHENOTYPIC AND MOLECULAR METHODS IN AHWAZ

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**Background and Aim:** Staphylococcus aureus may cause infection in all body organs. Many personnel and patients in hospitals may become carriers of this species. Nowadays, an intensive increases in the antibiotic resistance is recorded due to increase in the rate of antibiotic usages worldwide. The aim of this study was to investigate relative frequency of S.aureus and to determine the antibiotic sensitivity pattern.

**Methods:** A total of 114 S. aureus isolates were collected from clinical specimens at three teaching hospitals in Ahwaz, Iran.These strains were selected using laboratory standard methods and culture-specific. The antibiotic susceptibility testing was performed using disk diffusion and screening on plate. Moreover, PCR method was performed in order to detect mecA gene using specific primers.

**Results:** Susceptibility testing by disk diffusion method showed that 43 samples (37/7%) and 49 samples (42/1%) were resistant to oxacillin and cefoxitin respectively.Moreover, 54 samples (47/4%) were found to carry mecA gene using PCR. Highest resistances to antibiotics belonged to penicillin (98/2%), tetracycline(55/3%), erythromycin (37/7%), gentamicin (26/3%), respectively.

**Conclusion:** Our results showed high rates of antibiotic resistance in the S. aureus isolated from these hospitals. Therefore, it is recommended to limit the antibiotic uses without prescription or in unnecessary cases in order to decrease rate of microbial resistance to antibiotics.PCR technique was proved to be the best method to rapidly identify MRSA.Furthermore, cefoxitin disks were more useful than oxacillin disks to determine methicillin-resistance by disk diffusion method.

**Keywords:** Staphylococcus aureus, MRSA, Antibiotic resistance

# P205 - 918: DIARRHEAGENIC ESCHERICHIA COLI IN SOUTH OF IRAN: RESISTANT TO TETRACYCLINE IN ISOLATED STRAINS

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**Background and Aim:** Diarrhea is one of the most important causes of mortality in children under 5 years old in developing countries. Among bacterial pathogens, diarrheagenic Escherichia coli is one of the main causes of endemic and epidemic diarrhea worldwide. The aim of this study was to determine the prevalence of antibiotic resistance and distribution of tetracycline resistance genes in diarrheagenic E. coli strains isolated from children under the age of 5 years.

**Methods:** In this descriptive study, 550 fecal samples were collected from children. Bacterial isolation and identification was achieved according to standard bacteriological methods. Antimicrobial agents were tested by the disk diffusion method in accordance with CLSI guidelines. The molecular analysis of tetracycline resistance genes (tetA, tetB and tetC) was performed by Multiplex PCR.

**Results:** According to number of specimens examined, 112 diarrheagenic E. coli were isolated. Antibiogram analysis revealed that the highest and lowest rates of antibiotic resistance were against tetracycline (57.1%) and amikacin and nitrofurantoin (3.3%). Eighty- five (75.9%) of the isolates showed multi-drug resistant (MDR) pattern. Of 64 tetracycline resistant isolates, 56 (87.50%) strains contained tetracycline resistance genes. The frequency of tetracycline resistance genes including tetA, tetB and tetC in tetracycline resistant isolates were 58.9%, 44.6%, and 14.3% respectively.

**Conclusion:** Tetracycline resistance E. coli is more common in diarrheogenic strains. Also, antimicrobial resistance was more frequent in E. coli isolated from pediatric patients, associated with more antibiotic exposure in patients with gastroenteritis. The impact of unsupervised antibiotic use in some antibiotics is clear.

**Keywords:** Diarrheagenic E. coli, Tetracycline resistance, Multiplex PCR

# P206 - 923: COMPARSION OF THE EFFECT OF LUCILIA SERICATA AND NITROFURAZONE ON THE HEALING OF INFECTIOUN WOUNDS

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**Background and Aim:** Maggots have been considered for healing of wounds for centuries. In 1929, the first advances in this field were made by Dr. William Baer of Johns Hopkins University. In the 1940s, advances in the production and use of antibiotics reduced research into maggot therapy. Maggot therapy has become more attended due to the emergence of antibiotic-resistant bacterial strains.

**Methods:** The present study was performed on ten male rabbits that were kept under standard conditions. In each rabbit four circular wounds was made on their back and all of wounds was infected with diluted Staphylococcus aureus. In the control group, the wounds left without any intervention. Wounds of rabbits in other groups were introducted with nitrofurazone, larvae and both larvae+nitrofurazone respectively. Specifications and scoring grid were recorded accurately. Wound measurements were performed on day 0 (surgery day), day 3 (inflammation phase), day 7 (proliferation phase), day 14 (restoration phase) and day 21 (wound closure phase), and at the end of recovery process Evaluated and compared.

**Results:** The results showed that the group treated with the maggots had the greatest impact on wound healing, and the maggots play important role in wound healing in rabbit.

**Conclusion:** The results showed that the maggots can be used in healing skin infection caused by S.aureus.

**Keywords:** Maggot therapy, Infection wound, Staphylococcus aureus

# P207 - 924: COMPARISON OF AVERAGE ANTIBIOTIC RESISTANCE OF GRAM POSITIVE COCCI IN HOSPITALIZED PATIENTS IN RASHT RAZI HOSPITAL BETWEEN 2012- 16

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**Background and Aim:** Nosocomial infection defined as an infection acquired in hospital by a patient who was admitted for a reason other than that infection. Gram-positive cocci still predominate as a cause of nosocomial infections. Staphylococcus aureus and Enterococcus are the most commonly isolated bacteria causing nosocomial infection. These organisms frequently reveal a high resistance to antimicrobials. Antimicrobial resistance is one of our most serious global health threats. The purpose of this study is to investigate antimicrobial resistance main stream of Gram-positive cocci isolated from urine of hospitalized patients of Rasht Razi hospital between 2012- 16.

**Methods:** Urinary tract infections agents like Gram-positive cocci were isolated from admitted patients in Razi hospital of Rasht from 2012 to 2016 and their antibiotic resistance patterns were compared.

**Results:** Between Gram-positive cocci, catalase-negative cocci including Streptococcus viridans, Streptococcus group D and Entrococcus faecalis reveal increasing resistance to Ciprofloxacin, Doxycyclin, Amikacin, Gentamycin and decreasing resistance to Nitrofurantoin, Ampicilin and Penicillin. Among catalase-positive cocci, Micrococcus reveals resistance to Cefoxitin, Nitrofurantoin, Oxacilin, Doxycycilin, Ciprofloxacin, Amikasin and Ampicilin and was susceptible only to Gentamycin. Staphylococcus epidermidis was sensitive to Cefteriaxon and reveal decreasing resistance to Gentamycin and stability to Nitrofurantoin and increasing resistance to Trimethoprim and Ampicillin.

**Conclusion:** Use of Nitrofurantoin, Trimethoprim and Ampicilin can be effective in treatment of catalase-negative infections. It is better to prevent prescribing Doxycycilin, Ciprofloxacin, Gentamycin and Amikacin to improve treatment. Gentamycin but not Trimethoprim is suggested to eradication of infections due to catalase-positive cocci.

**Keywords:** Nosocomial infection, Gram-positive cocci, Antibiotic resistance

# P208 - 925: STUDY THE CAUSATIVE PREVALENT BACTERIAL AGENTS AND DETERMINATION OF THEIR ANTIBIOTIC RESISTANCE PATTERN IN SEPTICEMIA (CASE STUDY IN BUSHEHR IN 1395)

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**Background and Aim:** Septicemia is kind of serious infections caused by numerous agents; include bacteria in the bloodstream (Bacteriemia). This study aims to investigate the epidemic of septicemia and to define the resistance patterns caused by bacterial agents.

**Methods:** This quantitative cross-sectional research was carried out on 450 positive blood cultures isolated from the "Shohadaye khalije fars hospital" patients in Bushehr, during 1395.Data were analyzed through descriptive statistics and computed by SPSS software (version21).

**Results:** Gram- positive and gram-negative bacteria account for %( 30.4) and %( 69.6), respectively. According to the reports 'pseudomonas' was the most common bacterium among gram positive and gram negative bacteria which caused the infection. The most resistant bacterium wasFlavobacterium and the highest susceptibility to antibiotics was observed in staph saprophyticus.

**Conclusion:** Considering the prevalence of pseudomonas and Flavobacterium resistance, the future researches can be conducted toward them. Appropriate antibiotic therapy along with the hospital sanitation and health care, can be helpful in order to a proper treatment and to reduce medical expenses.

**Keywords:** Septicemia ,Antibiotic resistance ,Baceriemia, bushehr

# P209 - 926: AVERAGE ANTIBIOTIC RESISTANCE COMPARISON OF ENTROBACTERIACEAE ISOLATED FROM HOSPITALIZED PATIENTS IN RASHT RAZI HOSPITAL IN 2012-16

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**Background and Aim:** A nosocomial infection is defined as an infection occurring in a patient in a hospital or other health care facility in whom the infection was not present in incubation at the time of admission. Facultative anaerobic Gram-negative bacilli, including the family of Enterobacteriaceae are the main causes of nosocomial infections. Antimicrobial resistance has emerged as a significant threat to global health security and threatens the achievements of modern medicine. The aim of this study was evaluation of antimicrobial resistance main stream of Enterobacteriaceae spp.

**Methods:** Enterobacteriaceae spp. was isolated from urine samples of admitted patients in Rasht Razi hospital in 2012-16 and their antibiotic resistant patterns were compared during 5 years.

**Results:** Most of isolated Enterobacteriaceae in this study showed increasing resistance to Piperacillin and decreasing resistance to Trimethoprim, Nitrofurantoin and Amikacin.

**Conclusion:** Based on our results in this study in Rasht, prescribing of Trimethoprim, Nitrofurantoin and Amikacin is recommended for treatment of Enterobacteriaceae infections. Moreover, Piperacillin would not be the better choice any more.

**Keywords:** Nosocomial infection, Enterobacteriaceae, Antibiotic resistance

# P210 - 927: COMPARISON OF AVERAGE ANTIBACTERIAL RESISTANCE OF NON-FERMENTER BACTERIA ISOLATED FROM HOSPITALIZED PATIENTS IN RASHT RAZI HOSPITAL IN 2012-16

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**Background and Aim:** The term of nosocomial infection is synonymous with hospital acquired infections. An infection is considered as nosocomial if it develops in a patient who has been hospitalized for 48 to 72 hours and not been in latent period of infection at the time of admission. They are becoming more alarming in 21st century as antibiotic resistance spreads. Non-fermenting bacteria such as Pseudomonas and Acinetobacter species are major causes of hospital-acquired infections. Antimicrobial resistance is a global problem that must be addressed in all countries, due to the importation of drug-resistant micro-organism through international travel and trade. The aim of this study was to find the antimicrobial resistance main stream of non-fermenter bacteria isolated from urine samples of hospitalized patients in Rasht Razi hospital in 2012- 16.

**Methods:** Non-fermenter bacteria were isolated from admitted patients in Rasht Razi hospital in 2012-16 and antibiotic resistance pattern were compared during 5 years.

**Results:** Antibiotic resistance of Acinetobacter baumani to Ciproflixacin, Piperacillin, Ceftazidine, Cefepime and Gentamycin has been reduced but, it's resistance to Trimethoprim, Amikacin, Imipenem and Cefteriaxon has been increased. Resistance of Pseudomonas aeruginosa to Piperacillin, Nitrofurantoin, Gentamycin, Ciprofloxacin and Cefepime has been increased but, it's resistance to Imipenem, Ceftazidine and Amikacin has been reduced in 5 years.

**Conclusion:** Based on our results in this region, Ciprofloxacin, Piperacillin, Ceftazidine, Cefepime and Gentamycin can be prescribed to treatment of a patients infected by Acinetobactere. In case of Pseudomonas infections, Imipenem, Amikacin and Ceftazidine have preferance to Piperacillin, Nitrofurantoin, Gentamycin, Cefepime and Ciprofloxacin.

**Keywords:** Nosocomial infection, Non-fermenter Gram-negative Bacilli, Antibiotic resistance

# P211 - 930: ANTIBIOTIC RESISTANCE PROFILE OF KLEBSIELLA PNEUMONIAE STRAINS ISOLATED FROM IN- OR OUT-PATIENTS ADMITTED TO AYATOLLAH NABAVI HOSPITAL IN DEZFUL

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**Background and Aim:** Nowadays, probably due to extensive and unregulated use of antibiotics during the past decades, opportunistic infections due to antimicrobial-resistant strains of Klebsiella pneumoniae have been increased worldwide. Our goal was the determination of antibiotic resistance profile of K. pneumoniae strains isolated from patients living in Dezful.

**Methods:** Totally 55 strains of K. pneumoniae isolated from urine samples of in- or out-patients admitted to Nabavi Hospital of Dezful, suspected to having urinary tract infections were evaluated. Antibiotic susceptibility testing was performed according to the Clinical and Laboratory Standards Institute, CLSI, principles. Kirby Bauer method was applied using the following antimicrobial disks: Cephazolin, Gentamicin, Trimethoprim (Sulfamethoxazole), Imipenem, Tobramycin, Nalidixic acid, Ceftizoxime, Nitrofurantoin, Ceftriaxone, Tetracycline and Ciprofloxacin.

**Results:** Among 55 isolates, 17 strains were named as “multidrug resistant strains” due to their resistance against at least 4 antimicrobial agents or more. 33 strains showed resistances against one, two or three of the agents. None of the isolates were susceptible to all agents used in the study, while one strain showed resistance against all of the agents.

**Conclusion:** Current study was demonstrated the increased prevalence of resistance of K. pneumonia strains against commonly prescribed antimicrobial agents. Extensive and unregulated application of antimicrobial agents, probably, is the main reason for selective replacement of the drug-resistant strains in the field, though, prescription of antimicrobial agents should be properly managed.

**Keywords:** Klebsiella pneumoniae, Antibiotic resistance, urinary tract infection

# P212 - 931: INDUCTION OF MUTATION IN KLEBSIELLA PNEUMONIAE RESISTANCE GENE USING DIFFERENT CONCENTRATIONS OF DISINFECTANTS AND ITS ASSOCIATION WITH ANTIMICROBIAL RESISTANCE

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**Background and Aim:** Disinfectants are essential parts of any infection control and prevention programme in the hospitals. Antibiotic resistance of pathogenic microorganisms are increasing worldwide, while the role of the extensive application of disinfectants in the increment has not been elucidated yet. Current study was designed to explore any variations in K. pneumoniae resistance gene after managed exposure of the strains to quaternary ammonium compounds, a biocide. Association between resultant compound-specific resistance and antimicrobial resistance was demonstrated.

**Methods:** Totally, 45 K. pneumoniae strains, isolated from urine and feces samples of patients admitted to Nabavi hospital of Dezful, were identified to species level using standard microbiological and biochemical tests. Antimicrobial susceptibility testing was performed according to the Clinical and Laboratory Standards Institute, CLSI, approved principles. Gradual increases in the concentration of the disinfectant in the culture medium is used for induction of the compound-specific resistance in the bacteria. Variations in the sequences of genes that are associated with compound-specific resistance were determined using Polymerase chain reaction assay.

**Results:** After induction of the compound-specific resistance, susceptibility of the strains against the commonly used antimicrobials were determined and the significant reductions in susceptibility of the strains against Cephazolin, Ciprofloxacin, Ampicillin, Tetracycline, Nalidixic acid, Nitrofurantoin, Ceftriaxone and Imipenem were demonstrated. In one strain qacEd1 gene was seen.

**Conclusion:** Current study was demonstrated that, the propagation of K. pneumoniae strains in media containing quaternary ammonium compounds (at concentrations less than 2%) resulted in multi-agent resistance against commonly used antimicrobials, in addition to compound-specific resistance of the strains.

**Keywords:** Klebsiella pneumoniae, Quaternary ammonium compounds, Antimicrobial resistance

# P213 - 932: EPIDEMIOLOGY OF MULTIDRUG-RESISTANT ACINETOBACTER BAUMANNII STRAINS IN IRAN: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Acinetobacter baumannii is an important opportunistic pathogen that causes major public health concern especially in hospitalized patients due to the acquisition of multidrug resistance (MDR). The aim of this study was to systematically review published data about the prevalence rate of MDR-A. baumannii (MDR-AB) from different parts of Iran and provide an overall relative frequency (RF) using meta-analysis.

**Methods:** All available national and international databanks were searched to fnd published studies up to June 2016. Quality of studies was assessed by STROB and PRISMA forms. Because of the signifcant heterogeneity observed, random effects model was used to combine the results. STATA SE version 11.2 was used for statistical analysis.

**Results:** Out of the 9646 results, 37 suitable articles were extracted according to inclusion and exlusion criteria. The pooled prevalence of MDR-AB was estimated 72% annually. Relative frequency of MDR-AB in different studies varied from 22.8 to 100%.

**Conclusion:** Since the prevalence of MDR-AB is higher than many other countries, measures should be taken to keep the emergence and transmission of these strains to a minimum.

**Keywords:** Acinetobacter baumannii, Multidrug resistance, Epidemiology, Systematic review, Iran

# P214 - 938: ANTIBACTERIAL ACTIVITIES OF FERULA GUMMOSA AND ITS INTERACTION IN COMBINATION WITH CONVENTIONAL ANTIMICROBIAL, AGAINST GRAM POSITIVE BACTERIA

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**Background and Aim:** The genus Ferula which belongs to Umbelliferae family, has been used in traditional medicine. Many medical utilizations are reported, such as anti-hysteric, antispasmodic, sedative, laxative, carminative for epilepsy, toothache, fever, cough, irritable colon, feminine sterility, and against rheumatism. It also has been shown to contain anti-parasitic and antibacterial effects. The aim of current study was evaluation of antibacterial activities of Ferula gummosa and investigation of invitro pharmacological interactions of essential oil with conventional antimicrobial (penicillin G and cephalexin and Gentamicin) when used in combination against gram positive bacteria (such as Staphylococcus aureus, Staphylococcus saprophyticus, Staphylococcus epidermis).

**Methods:** Disk diffusion and broth dilution methods were used to determine the antibacterial activity of Ferula gummosa in the absence and presence of penicillin G and cephalexin and Gentamicin.

**Results:** The results indicated that Ferula gummosa extract was a stronger inhibitory effect on the bacteria. The combination of the essential oil of Ferula gummosa with penicillin G and with cephalexin and gentamicin against gram-positive bacteria gave a synergistic pattern and reduced the minimum effective dose of Antibiotics.

**Conclusion:** The combination of Ferula gummosa essential oil with penicillin G and with cephalexin and gentamicin may be applied for the combination therapy of gram positive bacteria.

**Keywords:** Ferula gummosa, Antibacterial Activities, Penicillin G, Cephalexin, Gentamicin, Iran

# P215 - 940: OPTIMIZATION OF BACILLUS SUBTILIS BACTERIA GROWTH CONDITIONS WITH JQ61819 IDENTIFICATION CODE, INDIGENOUS PROBIOTICS OF IRAN IN LABORATORY SCALE

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**Background and Aim:** Probiotics are living microorganisms that use them, Have beneficial effects on human health and livestock and poultry growth. Bacillus subtilis bacteria is used in the treatment of gastrointestinal disorders.Today, probiotic products are prepared for livestock based on B. subtilis.

**Methods:** In this study, native strains of the single gene company were prepared and used. The stage after the diagnostic tests was to determine the optimum composition of the culture medium in 100 ml of erlins containing 50 ml of medium. The factors such as carbon source, nitrogen and pH in growth and production were considered in optimizing the culture medium. The growth rate of bacteria in different media was determined after determining the optical absorption at 600 nm, mean and standard deviation.

**Results:** In examining the results, it was found that the growth of bacteria in 30 gr / ml was higher than other values. The bacterium has grown better in neutral and alkaline pHs. Also, the growth rate of bacteria in concentrations of 1.2 gr / ml, 1.7, 2.2 Nitrogen has no significant difference.

**Conclusion:** Factors that affect bacterial growth increase the production of bacterial enzymes and it can be concluded that they are naturally occurring in the form of a high percentage of these compounds, in a culture medium, it can be used to grow this bacterium.

**Keywords:** Probiotic, B. subtilis, optimization

# P216 - 945: EVALUATION OF INDUCIBLE RESISTANCE TO CLINDAMYCIN IN STAPHYLOCOCCUS AUREUS ISOLATED FROM CLINICAL AND NON-CLINICAL SPECIMENS

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**Background and Aim:** Macrolid-Lincosamide-Streptogramin B antibiotics are applied widely in order to treat infections caused by Staphylococcus aureus. Clindamycin is the selected drug in the treatment of skin infections and the soft tissues caused by methicillin resistance Staphylococcus aureus. In the current study, the frequency of inducible clindamycin resistance was investigated in Staphylococcus aureus isolated from clinical resources and healthy carriers.

**Methods:** In this study, 100 S.aureus were isolated from clinical (ulcers, blood, urine) and non-clinical (healthy carriers and hospital personnel) resources in Maragheh city. In order to identify S.aureus, gram stain, catalase and coagulase tests were conducted. After the detection of bacteria, a suspension equal to 0.5 Mcfarland was made and inoculated into the Mueller-Hinton agar medium. In addition, erythromycin and clindamycin disks were placed on the surface of medium, 1.5cm apart from each other. After 18 hours' incubation under the temperate of 35˚C, the results were investigated. S. aureus, 23 samples were resistant against erythromycin among which, 6 strains showed inducible clindamycin resistance having a D-shaped from inhibition zone of growth inhibition (4 cases) and colony growth within the inhibition zone around clindamycin (2 cases). According to the findings,14 strains showed resistance both towards erythromycin and clindamycin, while 3 cases showed resistance towards erythromycin and complete susceptibility towards clindamycin.

**Conclusion:** In the phenotypical assessment of induced resistance, 6 percent of S. aureus showed inducible clindamycin resistance.

**Keywords:** Staphylococcus aureus, D-test, clindamycin

# P217 - 946: EVALUATION OF MIC OF MUPIROCIN IN STAPHYLOCOCCUS AUREUS ISOLATED FROM CLINICAL AND NON-CLINICAL SPECIMENS

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**Background and Aim:** Mupirocin is an antibiotic that used for the treatment of Staphylococcus aureus skin infections and removal of nasal carriers. Nowadays resistance to mupirocin is observed in isolated Staphylococcus aureus from different sources. In this study, the minimum inhibitory concentration (Mic) level in Staphylococcus aureus isolated from clinical and nonclinical sources were investigated.

**Methods:** In this study, The MIC of mupirocin for S. aureus was determinate by E-test method. 100 Staphylococcus aureus were confirmed by biochemical tests. Then from each sample, suspensions were prepared equivalent to the MacFarland half and they were embedded in the Mueller-Hinton agar medium, and the mupirocin strips were placed on the surface of the medium, and the MIC was read after the incubation at 37 °C for 24 hours by examining inhibition zone.

**Results:** Of the 100 strains examined, 91 strains had a MIC less than 4µg/ml, of which these samples were susceptible to mupirocin, and two strains, one of which was taken from the nail of the hospital staff, and the other strain from the patients, had a lower level of resistance with MIC of more than 8 µg/ml and less than 256 µg/ml (256-8 µg/ml). In the end, five strains, one strain of patients, two strains of hospital staff and two other strains of healthy carriers, had a high resistance to MIC more than 1024 µg/ml.

**Conclusion:** Resistances to mupirocin have been observed in healthy subjects as compared to more clinical specimens.

**Keywords:** Staphylococcus aureus, Mupirocin, MIC, Healthy Carriers

# P218 - 973: MOLECULAR SCREENING OF COLISTIN RESISTANCE GENES AMONG ESCHERICHIA COLI STRAINS ISOLATED FROM POULTRY

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**Background and Aim:** Polymixins have long been considered as last resort treatment of multidrug-resistant enterobacteriaceae especially in the case of carbapenemase resistance gram-negative enteric bacteria. Importantly, plasmid mediated clostin resistance gene (mcr-1) was first described in 2015 among animal Escherichia coli isolates in China. Subsequently, presence of mcr-1 was reported in other countries in EU and also in the US. Subsequently, another emerging conlistin resistance gene was described as mcr-2 which then reported in few countries so far. Colistin resistance, despite being frequently observed in E. coli isolates of animal origins in Iran by phenotypic methods, has not yet reported to occur due to carriage of emerging clostin resistance genes.

**Methods:** In the present study, 218 E. coli isolates from diseased poultry including 98 isolates from Garmsar, 70 from semnan, and the remaining from other cities were screened for the presence of mcr1 and mcr2 by two polymerase chain reaction assays as described before.

**Results:** The obtained results did not reveal any positive case among the tested isolates.

**Conclusion:** It seems that colistin resistance via mcr1/mcr2 carriage is not prevalent in the studied area comparing to Southeast Asia. The molecular screening must be applied on a larger number of isolates in different geographical settings in Iran to clarify the importance of such emerging problem in Iran.

**Keywords:** mcr1, mcr2, Colistin, E. coli, Iran

# P219 - 974: VIRULENCE FACTORS IN ESCHERICHIA COLI ISOLATED FROM URINARY TRACT INFECTION AND THEIR RELATIONSHIP WITH ANTIBIOTIC RESISTANCE

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**Background and Aim:** Escherichia coli is the major causative pathogen of urinary tract infection (UTI) in human. Virulence factors and drug resistance play important roles in the pathogenesis of E. coli infections. The aims were to investigate the presence of uropathogenic virulence genes and to evaluate a relationship between antibiotic resistance and virulence in E. coli from UTI.

**Methods:** A total of 132 E. coli were collected between April and June 2015 in two hospitals of Sanandaj, Iran. Isolates were examined for susceptibility to 16 antibiotic disks using the disk diffusion method and possession of virulence genes by PCR. Associations between antimicrobial resistance and virulence genes were investigated. A $P<0.05$ was considered as statistically significant.

**Results:** Of the 132 isolates, the most prevalent virulence gene was pap, followed by cnf, hly and afa. A significant association was detected between the simultaneous presence of hly and pap. The most effective antibiotics were nitrofurantoin and cefoxitin and the least effective were ampicillin and trimethoprim-sulfamethoxazole. An association was seen between the presence of cnf and susceptibility to the certain antibiotics, whereas strains with a reduced susceptibility to the certain antibiotics were associated with a significantly increased prevalence of afa and hly ($P< 0.05$).

**Conclusion:** These findings suggest a correlation between presence of virulence gene and resistance in E. coli strains from UTI. The results indicate that there is a need for surveillance programs to monitor drug resistance in pathogenic E. coli.

**Keywords:** Urinary tract infection, Escherichia coli, Resistance, Antimicrobial agents, Virulence

# P220 - 979: ANTIBIOTICS RESISTANCE OF SALMONELLA ISOLATED FROM BROILER CHICKENS IN ARDABIL PROVINCE TO FIVE ANTIBACTERIAL AGENTS COMMONLY USED IN THE IRANIAN MEDICAL FIELD

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**Background and Aim:** Salmonellosis is an important disease zoonotic in worldwide that causes food-borne disease, gastroenteritis, enteric fever and bacteremia in humans. The purpose of this study was to determine the prevalence of salmonella in broiler flocks of Ardabil province and determination of antibiotics resistance of salmonella isolated to five antibacterial agents commonly used in the Iranian medical.

**Methods:** One-hundred and eighty nine samples including 70 liver and heart, and 49 intestine were collected for identification of salmonella from March 2015 to February 2016. After microbial culture and isolation, serotyping with anti-sera monovalent was performed. The Antibiotic resistance patterns of isolates was determined by disc diffusion test.

**Results:** In 7.4% samples were positive to Salmonella. All isolates were resistant to tetracycline. The highest resistance was to cotrimoxazole (50.0%), amoxicillin (35.7%) and ciprofloxacin (14.4%). No salmonella isolates were resistant to ceftriaxone.

**Conclusion:** The results of this study show the dominant serotype was salmonella entritidis and the high frequency of resistance to the three drugs tetracycline, cotrimoxazole and amoxicillin commonly used in the Iranian medical field. These findings are important for public health.

**Keywords:** Salmonella, Antimicrobial resistanc, Ardabil province

# P221 - 986: ANTIBIOTIC RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS AND ESCHERICHIA COLI ISOLATED FROM CLINICAL SAMPLES IN ESFAHAN

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**Background and Aim:** Today, Using of antibiotics in advanced societies has increased dramatically. It cause the bacteria showed resistance to antibotics. Then, treatment against bacteria is very difficult. Therefore, the present study was conducted to determine the pattern of antimicrobial of Staphylococcus aureus and Escherichia coli.

**Methods:** This is a descriptive study. 30 samples from each bacteria(Staphylococcus aureus and Escherichia coli. ) was obtained from various labratoaries in Esfahan infection. The bacteria was confirmed by selective test. The antibiotic susceptibility pattern of the strains studied was kirby bauer method. The concentration of bacteria suspension was 0.5 × 108 cfu / ml. Antibiotic sensivity was assessed with Vancomycin, Cefazolin, Gemacin, Tetracyclin, Oxacillin and Cefalosporin for S. aureus, and with Gentamycin, Cefazolin, Cefalosporin , Levofloxacin and Tetracycline for Escherichia coli.

**Results:** The result of this study showed that all S. aureus were resistant to Cefazolin, Tetracycline, Oxacillin and Vancomycin, but against Cefalosporin (33.5%), to Gentamicin (40%) was susceptible. E.coli are completely sensitive to Gentamycin and Cefazolin, to Cefalosporin (67%), to Levofloxacin (70%), to Tetracycline (30%) was sensitive.

**Conclusion:** Most of the bacteria show resistance to antiboitics. It is alarming in Esfahan that needs serious attention. Also, s.aureus showed the most resistance to antibiotic but it is sensitive to Cefalosporin until now. Resistant pattern of E.coli showed that it is suceptible to most antibiotics. So, it seems people should change style life to use herbal treatment.

**Keywords:** S. aureus, E.coli, Antibiotic Resistance pattern

# P222 - 988: FREQUENCY OF CTX-M-1 GENE IN ESCHERICHIA COLI ISOLATES OF ESBL-PRODUCING ENZYME IN CLINICAL SAMPLES BY POLYMERASE CHAIN REACTION (PCR) IN YASUJ

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**Background and Aim:** Frequency of CTX-M-1 gene in Escherichia coli isolates of ESBL-producing enzyme in clinical samples by polymerase chain reaction (PCR) in Yasuj.

**Methods:** In this practical study, susceptibility of isolated bacteria to 13 antibiotics were indicated by disk diffusion method according to CLSI guidelines and strains were analyzed for the presence of widespread beta-lactamase enzymes via two-disc synergy method. . Thus ، The prevalence of CTX-M1 ESBL gene samples were determined using PCR and the data were analyzed statistically.

**Results:** A total of 200 isolates of Escherichia coli were isolated. The presence of CTX-M-1 gene were also isolated using the PCR method. From 200 strains studied, 62 (31%), of strains produced ESBL. After PCR processing of 62 produced ESBL, 43 isolates (69.4%) were identified as CTX-M-1 genes.

**Conclusion:** The results of this study showed the high percentage of beta-lactamase resistance among of Escherichia coli strains. This is a serious public hazard that should be pointed out to measures for preventing this hazard.

**Keywords:** E.coli, ESBL, PCR, CTXM1

# P223 - 989: MOLECULAR EPIDEMIOLOGY OF EXTENDED –SPECTRUM B-LACTAMASES GENES AMONG DIARRHEAGENIC ESCHERICHIA COLI ISOLATES PEDIATRICS FROM IN BOSHEHR, IRAN

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**Background and Aim:** Diarrhea is one of the major causes of death in children under age 5 in developing countries. Among bacterial pathogens, Escherichia coli (Diarrheagenic E. Coli) is the most important causes of diarrhea in endemic and epidemic worldwide. The aim of this study was to determine the prevalence of genes blaTEM-1 and blaCTX-M-2 of E. coli strains causing diarrhea in children under 5 years.

**Methods:** This cross-sectional study – descriptive was preformed on 300 E. coli strains isolated from children with diarrhea. Using conventional biochemical tests, E. coli isolates were identified. To evaluate the antibiotic resistance and detection of ESBL-producing strains disk diffusion method and Test Double disk synergy test (DDST) were used according to CLSI guidelines. The gene prevalence of blaTEM-1 and blaCTX-M-2 was evaluated using Multiplex PCR.

**Results:** The most antibiotic resistance was showed to cephalosporin and the lowest was related to carbapenem respectively. Of total isolates studied in 292 strains (97.33%) wereidentified associated with ESBL genes. BlaTEM-1 gene and blaCTX-M-2, were as single in 213 (71%) and 27 (9%) and in 52 (33/17%) were at the same time.

**Conclusion:** Unlike other countries with the highest prevalence of beta-lactamase resistance genes of bla CTX-M-2 genes bla TEM-1 gene is more widespread in this study. due to the spread of resistant strains the need for continuous monitoring and more accurate identification of strains of ESBL Integrons is necessary.

**Keywords:** CTX-M2, TEM-1, Multiplex PCR, E.coli

# P224 - 991: IN VITRO INHIBITORY EFFECT OF PYRAN NANOPARTICLES ON ESBL PRODUCING ESCHERICHIA COLI STRAINS

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**Background and Aim:** The increase in ESBL-producing Escherichia coli among community-onset urinary tract infections (UTI) is an important public health concern as these organisms are resistant to multiple antimicrobial agents. Increasingly antibiotic resistance rate among Escherichia coli isolates have made researchers to work in the area of nanoscience and nanotechnology. There is increasing optimism that nanotechnology, as applied to medicine, will bring significant advances in the treatment of disease.

**Methods:** This study was performed on 102 clinical isolates. Isolates were identified as Escherichia coli based on biochemical tests. Antimicrobial susceptibility was performed using Kirby-Bauer disk diffusion method against four antibiotics. ESBLs producer were screened by phenotypic confirmatory test (PCT). MICs of pyran nanoparticles was determined using sterile 2ml 96-well plates. The tested dilutions ranged from 1250 to 2.44 µg/mL using dimethyl sulfoxide (DMSO) as solvent. MBC was determined by subculturing the contents of wells that showed no visible growth of bacteria onto Muller Hinton agar plates and incubating at 37°C for 18 h.

**Results:** ESBLs screening of strains by phenotypic confirmatory test showed that out of 102 samples 46 isolates were ESBL positive. Five ESBL producing isolates were tested for MIC valus and pyran nanoparticles showed antibacterial activity with MIC values of 1250 µg/mL. Furthermore our MIC was equal to MBC.

**Conclusion:** Nanoparticles provide a versatile platform in designing materials for antimicrobial therapy. However, further studies at the fundamental, biological, and pharmacological level are required to enable systemic administration of these antimicrobials. In conclusion, nanoparticles have offered promising avenues to design effective next-generation therapeutics against bacterial threats.

**Keywords:** ESBLs, Escherichia coli, nanoparticles

# P225 - 993: TRENDS OF ANTIMICROBIAL RESISTANCE IN ESCHERICHIA COLI ISOLATES OBTAINED FROM A SPECIALIZED WOMEN'S AND CHILDREN'S HOSPITAL AT SOUTHWEST OF IRAN

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**Background and Aim:** Escherichia coli was known as a clinical significance which can cause a wide range of infections, including urinary tract infections (UTIs), blood stream infections (BSIs), and frequently can be isolated from various clinical specimens. Evaluation of antimicrobial resistant pattern is a necessary action, especially about such bacteria which are frequent and life threatening. The aims of this study were to determine the frequency and antimicrobial resistant pattern of E. coli isolates obtained from various clinical specimens.

**Methods:** This retrospective study performed within a seven months period from January 2015 to August 2015 at a specialized women's and children's hospital in Shiraz, Iran. E. coli isolates were obtained from various clinical specimens and were identified using the standard microbiological procedure. Antimicrobial susceptibility patterns were determined using disk diffusion method in accordance with CLSI recommendation.

**Results:** Of the total 130 positive cultures, the majority of E. coli isolates were obtained from urine 96 (73.8%) and blood 11 (8.5%) specimens. Overall, gentamicin (70.8%) was the effective antibiotic for tested E. coli isolates. E. coli isolates obtained from urine specimens showed the highest resistance rates against ampicillin (84.4%) and nalidixic acid (61.5%); while, they showed the most sensitivity to gentamicin (79.2%), nitrofurantoin (70.8%) and ciprofloxacin (66.7%). Moreover, the highest antibiotic resistance rates belonged to isolates recovered from endotracheal tube (ETT).

**Conclusion:** The results showed gentamicin as the most effective antibiotic against E. coli infections. However, beside the gentamicin we can recommend nitrofurantoin and ciprofloxacin as effective agents against UTIs.

**Keywords:**Escherichia coli, Women, Children, Nosocomial infection, Antibiotic susceptibility

# P226 - 1007: THE PROBABILITY OF DRUG RESISTANCE REDUCTION BY AQUEOUS AND ALCOHOLIC EXTRACTS OF QAEN BARBERRY

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**Background and Aim:** Drug resistance is one of the new human problems that threaten currently the lives of many human beings. Drug resistance to fungal diseases is a new challenge to medical mycology, and Aspergillus is one of the most important fungi which will faced to drug resistance challenge, especially in the near future.

**Methods:** In this study, the antifungal effects of aqueous and alcoholic extracts of barberry, as well as the synergistic effects of these two extracts with two drugs of Itraconazole and Voriconazole was investigated on 4 strains of Aspergillus flavus ATCC 39, Aspergillus niger ATCC 9142, Aspergillus fumigatus ATCC 278 and Aspergillus terreus ATCC 275.

**Results:** The minimum inhibitory concentration (MIC) results indicate that synergistic effect of methanolic extracts of barberry and Itraconazole against A.niger ATCC 9142 was 4 mg/ml which was comparable to the result of this drug alone against the same fungi with 16 mg/ml MIC. Also, the combination of aqueous extracts of Barberry and Voriconazole on A.flavus ATCC 39 and A.fumigatus ATCC 278 were 8 mg/ml and 16 mg/ml which were comparable with 4 mg/ml and 8 mg/ml of Voriconazole drug alone. However, Iranian aqueous and alcoholic blueberries extracts (Qaen's crop) did not have any antifungal effect against the relevant strains.

**Conclusion:** The combination of synergistic drugs and extracts reduces dosage and hence reduces the side effects and drug resistance.

**Keywords:** Aspergillus, Qaen Barberry, Itraconazole, Voriconazole, Antifungal, Drug

## P227 - 1010: ANTIBACTERIAL EFFECT OF ARTEMISIA AUCHERI

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**Background and Aim:** Artemisia species, which are medically beneficial, are widespread in temperate regions of both Northern and Southern hemispheres among which Iran is located. About 35 species of Artemisia are indigenous in Iran and one of them is Artemisia aucheri . This plant is conventionally being used as astringent ,disinfectant, antimicrobial and anti-parasitic; more over according to new experiments, this plant has antimicrobial, antioxidant, cytotoxic and anti-proliferation.

**Methods:** In exchange for this matter, antimicrobial effects of A. Aucheri, which saliently are used in modern and traditional medicine, on Staphylococcus aureus, S. epidermidis, Escherichia coli, Salmonella typhimurium , Bacillus subtilis, Brenneria nigrifluens, Streptomyces scabies, Rhizobium radiobacter, Rhizobium vitis, Xanthomonas axonopodis pv.citri, Xanthomonas arboricola pv. Juglandis and Pseudomonas aeruginosa has been discussed.

**Results:** A. aucheri essential oil and extract may be a source of antibacterial activity against plant bacterial pathogens. This research confirms that the essential oil and extract of A. aucheri has high antibacterial activities against plant bacterial pathogens. This research confirms that the essential oil and extract of A. aucheri has high antibacterial activities against Staphylococcus aureus, S. epidermidis, Escherichia coli, Salmonella typhimurium , Bacillus subtilis, Brenneria nigrifluens, Streptomyces scabies, Rhizobium radyiobacter, Rhizobium vitis, Xanthomonas axonopodis pv.citri, Xanthomonas arboricola pv. Juglandis and Pseudomonas aeruginosa .

**Conclusion:** In general, both essential oil and ethanolic extract showed desirable antimicrobial activity against plant photogenic bacteria. Therefore, Artemisia aucheri can be considered as a biopesticide.

**Keywords:** Antibacterial activity, Artemisia aucheri, Essential oil

# P228 - 1011: PSEUDOMONAS AERUGINOSA IN HOSPITALIZED PATIENTS: THE ASSESS MULTIDRUG RESISTANCE AND IMP GENE IN ISOLATES

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**Background and Aim:** Pseudomonas aeruginosa is a gram negative ubiquitous opportunistic bacterium and one of the more problematic drug-resistant pathogens encountered today. The goals of the present multicenter research were to assess antibiotic resistance profiles, and detection of antibiotic resistance IMP gene among the clinical isolates of P. aeruginosa.

**Methods:** A total of 80 nonduplicate isolates of P. aeruginosa were recovered from inpatients hospitalized in main referral hospitals in Shiraz and in Yasuj cities, southwest of Iran. The collected specimens were cultured on blood agar and MacConkey agar. Bacterial identification was done by standard diagnostic tests. Antimicrobial susceptibility test was performed according to CLSI recomendations. Resistance genes were detected by PCR method.

**Results:** Forty-two (52.5%) isolates recovered from wound specimens. Colistin was the most effective antibiotic against isolates (97.5% isolates were susceptible) and levofloxacin was the least effective drug (67.5% isolates were resistant). The most common antibiotic resistance pattern was CIPR-CPMR-GEMR (47 isolates). 58.75% isolates were identified as MDR. Among 47 isolates which showed resistance to imipenem in disk diffusion test, 39 (82.97%) isolates carried blaIMP resistance gene in the PCR assay. The blaIMP resistance gene was detected in all MDR isolates.

**Conclusion:** In our study the emergence of potentially highly pathogenic and carbapenem-resistant strains in joining with a multidrug resistant phenotype is alarming, however, a regular surveillance of virulence determinants, monitoring of antibiotic susceptibility pattern and designing practical guide antibiotic stewardship for Pseudomonas aeruginosa are suggested.

**Keywords:** Hospitalized patients, Pseudomonas aeruginosa, Multidrug Resistance, IMP gene

# P229 - 1016: KLEBSIELLA PNEUMONIA IN HOSPITALIZED PATIENTS: DETECTION OF ANTIBIOTIC RESISTANCE GENES IN ISOLATES

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**Background and Aim:** Klebsiella pneumoniae is a gram negative bacilli in enterobacteriaceae family and causes serious epidemic and endemic nosocomial infections. The vast majority of Klebsiella infections, however, are associated with hospitalization. The objective of this study was to screen for the presence of the qnrA and qnrD genes in clinical isolates of K.pneumoniae recovered from hospitalized patients in Shiraz, Iran.

**Methods:** K. pneumonia strains isolated from clinical specimens of hospitalized patients from 2014 to 2016 in Shiraz (Iran) were tested. Culture was performed on microbiological media and isolates were recognized as K. pneumoniae based on morphological characteristics, colony appearance and biochemical tests. Genes encoding antibiotic resistance determinants were detected by PCR assay.

**Results:** Ninety-six clinical isolates of K. pneumoniae collected from hospitalized patients were included in to the study. Most of patients (35.66%) were hospitalized in intensive care unit (ICU). Sixty-two (64.13%) of strains were isolated from urine, therefore urine was the most common specimens that isolates were recovered. Among 96 K. pneumoniae isolates for which we performed PCR assay, isolates harboring qnrA gene were only detected in 8 isolates (8.30% of strains). The qnrD gene was not founded in isolates.

**Conclusion:** With attention to results, updates of trends in the use of antimicrobial agents in hospitals are crucial data for clinical care management and for improving the habits of antibiotic prescribing.

**Keywords:** Klebsiella pneumoniae, antibiotic resistance genes, hospitalized patients.

# P230 - 1021: STUDY ABOUT ANTIMICROBIAL RESISTANCE OF PSEUDOMONAS AERUGINOSA IN URINARY INFECTION

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**Background and Aim:** Pseudomonas aeruginosa is a gram-negative opportunist pathogen that cause different infections such as urinary infection. This pathogen can quickly get antimicrobial resistance that this resistance can make serious problems to medical society and because this pathogen is one of most important agents that cause nosocomial infection it can make serious problems for infection control plans. Necessity of infection control plans and prevention of spreading antimicrobial resistance that make problems to infection control plans and health of patients, show reasons to study about antimicrobial resistance in p.aeruginosa.

**Methods:** 2170 urine samples by clean cash method from hospitalized patients in nephrology,urology,graft and ICU wards were gathered. With standard diagnostic chemical tests 16 p.aeruginosa pathogens were isolated. Antimicrobial susceptibility test by disc diffusion method performed. Diameter of growth inhibition around each discs were measured and interpreted according to ATCC orders.

**Results:** Results of this study show resistance of p.aeruginosa to cotrimoxazole(SXT) is 100%, nitrofurantoin(FM) 94%, ciprofloxacin(CP) 75%, levofloxacin(LEVO) and imipenem(IPM) 50%, also ceftriaxone(CTX) and meropenem(MERO) is less than 50%.

**Conclusion:** Cotrimoxazole, nitrofurantoin, ciprofloxacin are 3 important antibiotics that are used to remedy infections but high percentage antimicrobial resistance of P. aeruginosa to those antibiotics show serious problems that need to more study and researches.

**Keywords:** Antimicrobial resistance, pseudomonas aeruginosa, infection control,

# P231 - 1031: ASSAY OF INTEGRON-ASSOCIATED ANTIBIOTIC RESISTANCE IN KLEBSIELLA STRAINS ISOLATED FROM URINARY TRACT INFECTIONS

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**Background and Aim:** In recent years, the threat of acquisition of antibiotic resistance is growing, horizontal transfer of antibiotic resistance genes has led to the rapid emergence of antibiotic resistance among clinical isolates of bacteria. The aim of this study was to survey existence of integrons and its relation with antibiotic resistance among clinical isolates of Klebsiella.

**Methods:** From Jun 2015 to May 2016, 129 Klebsiella isolates collected from Karaj hospitals and laboratories. Antimicrobial susceptibility was performed using Kirby-Bauer disk diffusion and ESBLs producer were screened by phenotypic confirmatory test (PCT). Integrons were detected using PCR.

**Results:** Of the 129 Klebsiella sample, 80.6% and 19.4% were obtained from women and men respectively. The pattern of sensitivity to antibiotics were in the following order: ofloxacin (89.1%), chloramphenicol and imipenem (86.0%), norfloxacin (85.3%), gentamicin (84.5%), trimethoprim-sulfamethoxazole and ceftriaxone (75.2%), ceftizoxime and ceftazidime (74.4%), ciprofloxacin, amikacin and tetracycline (69.0%), nalidixic acid (69.8%), cefotaxime (66.7%), cephalexin (62.8%), cephalotin (60.5%), nitrofurantoin (22.5%), amoxicillin-clavulanic acid (17.8%), amoxcicillin (6.2%). Among 129 isolates (82.9%) were multidrug resistant and (19.3%) of the isolates harbour integrons. Frequencies of MDR among integron-positive isolates were 100%. Also, (71.3%) and (28.7%) of isolates were ESBLs positive and negative respectively.

**Conclusion:** Results showed integron elements were prevalent among MDR isolates. Presence of integron can be used as a marker to identify MDR isolates. Prevalence of ESBLs among clinical isolates of Klebsiella limits therapeutic options of nosocomial pathogens.

**Keywords:** Klebsiella, antibiotic resistance, integron

# P232 - 1046: CARBAPENEM RESISTANCE IN MULTI-DRUG RESISTANCE CLINICAL ISOLATES ACINTOBACTER BUMANNI: ASSOCIATION OF INTEGRONS

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**Background and Aim:** The development of antibiotic resistance among Acintobacter baumannii strains is a major concern in hospitals. The integrons (1 and 2) are the most frequently identified integrones in multi-drug resistant (MDR) A. baumannii isolates.The aim of this study was investigation of A.baumanni resistance to carbapenem in MDR and their relation with integrons, isolated from patients referred to Imam Khomeini and talegani hospitals Ahvaz Iran.

**Methods:** A total 115 Acintobacter spp. isolates were collected from July 2015 to March 2016. The isolates were identified by phenotypic tests and PCR for confirm A.baumanni by blaOXA-51 gen. Antimicrobial susceptibility was determined by disc diffusion method. The presence of intI1 and intI 2 was determined by PCR for detection of the integrons 1 and 2.

**Results:** Out of 115 isolates 77 strains confirmed as A. baumanni by PCR for blaOXA-51 gene. The antibiotic resistance of isolated A. baumanni were as follow: Gentamicin (%98.7) Amikascin, Ceftriaxone (98.7), Ceftazidime, Cefotaxime, Piperacillin-tazobactam, Cefepime, Piperacillin (97.4%), Meropenem (94.8%), Imipenem (89%). The frequency of intI 1 and intI 2 genes were 49 (61.2%) and 25 (31.2%) respectively.

**Conclusion:** High prevalence of integrons among Acinetobater baumannii isolated in Ahvaz hospitals indicates the importance role of integrons in MDR in this bacteria.

**Keywords:** Acintobacter baumannii, multi-drug resistance, integron classes

# P233 - 1047: RECENT PROSPECTIVE OF SESQUITERPENE LACTONES'S ANTIMICROBIAL ACTIVITIES

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**Background and Aim:** The rapid onset of resistance to most antibacterial agents diminishes their effectiveness considerably and necessitates constant supply new and safe antimicrobials materials for effective control of human diseases caused by microorganisms. One of the most important sources of new antibacterial agents is natural products. Sesquiterpene Lactones (SLs) are one of the unique herbal sources of antibacterial agents, and have wide range of biological activities, mostly based on their alkylating capabilities, which underlie their therapeutic potential. Additional properties of SLs are lower toxicity and lower side effects than other biochemical antibacterial drugs.

**Methods:** The current review has been achieved by using an organized search of the scientific data published on antimicrobial biological activity and phytochemical of Sesquiterpene Lactones from various databases, including PubMed, ScienceDirect, Scopus, Scielo, SciFinder and Google Scholar.

**Results:** The results of the present study showed sesquiterpene lactone could be a good candidate as an agent against some bacterial infections.

**Conclusion:** Sesquiterpenes lactones (STLs) are widely presented in numerous of plants. They are described as the active constituents that used in traditional medicine for the treatment of various diseases. The present study reveals potentials of STL for the management of bacterial infections. So STLs can be generally used as a useful therapy in clinical trials. Also we do complementary research on the signaling pathways of STLs for discovery molecular mechanism of its antibacterial effects.

**Keywords:** Sesquiterpene Lactones, antibacterial

# P234 - 1054: ANTIBIOTIC RESISTANT PATTERNS OF ESCHERICHIA COLI AND KLEBSIELLA PNEUMONIAE ISOLATES COLLECTED FROM PATIENTS REFERRING TO TEACHING HOSPITALS IN AHVAZ, IRAN

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**Background and Aim:** The Enterobacteriaceae are a large group of gram-negative rods whose natural habitat is the intestinal tract of humans and animals. Some enteric organisms, such as Escherichia coli, are a part of the normal microbiota and incidentally cause of disease. Antimicrobial resistance in Enterobacteriaceae species has been increased in recent years. The purpose of this study was to determine of the antimicrobial susceptibility patterns among of E.coli and Klebsiella pneumonia species isolated from the clinical specimens of patients referring to Ahvas teaching hospitals.

**Methods:** In this study, a total of 100 isolates of E.coli and Klebsiella pneumoniae from various clinical spcimens such as : blood, urine, wound, ….and sputum were examined From April to June 2017. The isolates were initially identified by phenotypic standard biochemical tests such as TSI, Citrate, Urea, Indol, Motility and so on. The antibiotic susceptibility test was performed using 7 antibiotics by the disc diffusion Kirby- Bauer method according to CLSI recommendations.

**Results:** The results of this study showed high antibiotic resistance among of the isolates. The highest resistance of E.coli and Klebsiella pneumoniae isolates (93%) was seen to ceftazidime. The resistant rates to various other antibiotics were as follows: tetracycline (54%), azithromycin (51%), ciprofloxacin (42%), ertapenem (17%), amikacin (16%) and colistin (15%). The most susceptibility among of E.coli and Klebsiella pneumonia isolates was seen to colistin.

**Conclusion:** Optimization of using antimicrobial agents and control of infection is recommended for prevention of drug resistant development among patients with infection due to E.coli and Klebsiella pneumoniae isolates.

**Keywords:** Escherichia coli and Klebsiella pneumoniae, antibiotic resistance

# P235 - 1055: CONTROLLED BURN WOUNDS INFECTED WITH P. AERUGINOSA INFECTIONS WITH DRUG-RESISTANT MENTHA JUST IN VITRO AND IN VIVO ON MALE WISTAR RATS

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**Background and Aim:** Burn wound is a susceptible site for incidence of resistant infections. Therefore, research for finding effective drugs against Resistant to Pseudomonas aeruginosa, the leading pathogen causing burn wound infection, is necessary. The current study aimed at investigating the antibacterial effect of herb including: Mentha pulegium on burn infection caused by P. aeruginosa infections with drug-resistant and then comparing the obtained results with the results of selected antibiotics on the infection.

**Methods:** Anti-Pseudomonas activity of plant' extractions was evaluated by well diffusion method. The evaluation of burn wound recovery treated with Mentha pulegium on burn wounds of albinos. Wound area and recovery percentage was measured. The number of neutrophils and lymphocytes, from all infected groups the sample of blood was obtained.

**Results:** Anti-Pseudomonas activity of plant' extractions was evaluated by well diffusion method. The evaluation of burn wound recovery treated with Mentha pulegium on burn wounds of albinos. Wound area and recovery percentage was measured. The number of neutrophils and lymphocytes, from all infected groups the sample of blood was obtained.

**Conclusion:** Based on the obtained results of this study on these plant species and their positive activity on treatment of infected burn wounds, it was concluded that these plant can be considered and used as an anti-Pseudomonas.

**Keywords:** Mentha pulegium, wound healing, P. aeruginosa infections with drug-resistant

# P236 - 1069: MOLECULAR EVALUATIONS OF EXTENDED SPECTRUM B-LACTAMASE PRODUCING STRAINS OF SERRATIA ISOLATED FROM BLOOD SAMPLES OF THE PATIENTS IN NAMAZI HOSPITAL, SHIRAZ, SOUTHERN IRAN

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**Background and Aim:** Nowadays, the presence of extended-spectrum β-lactamases (ESBLs) producing strains in Serratia genus causes the emergence of resistance to many antibiotics. So, the lack of proper diagnosis of ESBLs strains can lead to failure in the treatment. The objective of the present study was to investigate ESBLs production in Serratia strains isolated from the clinical blood samples in Shiraz, Iran.

**Methods:** In this study, 39 Serratia strains isolated from the patients referred to Namazi Hospital, during a 2 year period were tested. The antimicrobial resistance of the isolates to 21 antibiotics was evaluated using Kirby-Bauer disk diffusion method. Combination disk method was used to determine the ESBL phenotype among the isolates. PCR was performed to investigate the presence of ESBL genes of SHV, OXA and TEM types.

**Results:** The lowest antibiotic resistance rates belonged to meropenem (7.69%) and imipenem (5.12%). Overall, positive ESBL phenotype was identifed in 69% (n = 27) of the isolates, 70.37% (n = 19) for S. marcescens and 29.62% (n = 8) for S. liquefaciens. Results obtained by PCR showed that only 20.51% carried OXA gene and 15.38% carried SHV-1 gene. TEM gene was detected in none of the isolates.

**Conclusion:** This study showed a high prevalence of the emerging ESBL producing strains among clinical isolates of Serratia that could lead to an increase in antibiotic resistance. However, ESBLs genes other than those tested here may be more responsible for the emergence of ESBL phenotype among Serratia clinical isolates in our region.

**Keywords:** Serratia, Extended-spectrum β-lactamases, OXA, SHV, TEM

# P237 - 1072: VIRULENCE MARKERS AND DRUG RESISTANCE IN PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is a nonfermenter gram negative bacilli and different infections such as endocarditis, pneumonia, malignant otitis externa, bacteremia and burn infections. The rapid increase of multidrug-resistant P. aeruginosa isolates in clinical settings worldwide has resulted in increased mortality rate. The aims of the current research were to identify antibiotic resistance profiles, carbapenemase production and detection of virulence genes in P. aeruginosa clinical isolates.

**Methods:** In this research, P. aeruginosa strains were isolated from inpatients hospitalized in four main referral hospitals in southwest of Iran. The specimens of patients were cultured on MacConkey agar. P. aeruginosa identification was performed by specific diagnostic tests. Antibiotic susceptibility test was done using CLSI guidelines. Modified hodge test was used for detection of carbapenemase production in isolates. Virulence genes were identified by PCR molecular method.

**Results:** A total of 80 nonduplicate isolates of P.aeruginosa were recovered from inpatients. P. aeruginosa infected patients consisted of 49 males (61.25%) and 31 females (38.75%). Maximum number of cases were in the age group of less than 30 years (n=39, 48.75%). Susceptibility rates for imipenem, amikacin, ceftazidime and ciprofloxacin were 41.25%, 40%, 38.75%, and 35%, respectively. 30% of isolates were carbapenemase producer (MHT+). Among studied isolates, plcH+, lasB+ genotype (100% isolates) were the most common virulence genes patterns.

**Conclusion:** The progressive increase in carbapenem resistance prevalence in Iran is alarming, therefore, cabapenems cannot serve as the drug of choice for treating multidrug resistant P. aeruginosa infections in near future.

**Keywords:** Pseudomonas aeruginosa, Drug Resistance, Virulence markers

# P238 - 1081: ANTIBACTERIAL EFFECT OF HYDROALCOLIC AND AQUEOUS EXTRACT OF NIGELLA SATIVA

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**Background and Aim:** Nigella sativa has been known as a medicinal plant for more than 2000 years. It has anti_fungal , anti_microbial and anti_inflammatory effects.

**Methods:** In this research we use mass gas chromatography ( Gc_Mass) to analyze hydro_alcolic exteract of Nigella sativ. Antimicrobial effect of hydro_alcolic and aqueous extract on bacteria Escherichia coli and Staphylococcus aureus was done using antibiogarm and agar well diffusion. MIC and MBC values were also determined.

**Results:** In the case of hydro_alcolic extract inhibition zone diameter was 21 mm for Escherichia coli and 9 mm for Staphylococcus areus. Both bacteria were resistant to aqueous extract.MIC of hydro_alcolic extract was 30/6 ml/liter for both of bacteria and MBC of hydro_alcolic extract was 61 ml/liter for both of bacteria. But observed no groth inhibition effect of Escherichia coli and Staphylococcus aureus in aqueous extract. The active ingredient of ethyl linoleate with a probability of 99% was confirmed by mass gas chromatography.

**Conclusion:** Nigella sativa has antimicrobial effect and it is less expensive than other synethic drugs. Therefore, this plant is a good option for use as an antimicrobial agent.

**Keywords:** Nigella Saiva extracts, Ethyl linoleate, Antimicrobial effects

# P239 - 1082: AN OVERVIEW OF THE ANTIMICROBIAL RESISTANCE OF PSEUDOMONAS AERUGINOSA IN IRAN

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic Gram-negative bacteria that can produce extended spectrum β-lactamase (ESBL) enzymes and spread the resistance genes. The ESBL producer bacteria hydrolyze beta-lactams, cephalosporins, and monobactams. Nosocomial infections caused by P. aeruginosa are very important in immunodeficient and burned patients. The aim of this study is the review of antimicrobial resistance mechanisms in P. aeruginosa clinical isolates in Iran.

**Methods:** The available evidence from various studies, such as search to pubmed and scopus databases, regarding the antibiotic resistance of P. aeruginosa in Iran have been reviewed.

**Results:** The prevalence of p. aeruginosa, and this evaluation showed that the P. aeruginosa is available in all regions of Iran especially in the central part of the country, and 83.8% of it is positive for ESBL. According to the reviews in Iran, All of the imipenem-resistant P. aeruginosa isolates were - Metallo-β-lactamase (MBL) positive and 74.3% of the MBL isolates were positive for the blaIMP gene. Some strains due to encoding drug resistance genes such as aac (6 ') – 1 and VEB-1, observed 93% resistance to ciprofloxacin and 67% to amikacin. The highest antibiotic resistance appertain to penicillin (100%), norofloxacin (90.6%), tetracycline (90.19%), imipenem (~54%) and erythromycin (43.13%), in contrast colisitin (8.3%) had the lowest resistance.

**Conclusion:** Consider that, the prevalence of P. aeruginosa is increasing and gains resistance to different classes of antibiotics, it is necessary to the useful strategies to management and treatment of this bacterium.

**Keywords:** Pseudomonas aeruginosa, antibiotic resistance, extended-spectrum β-lactamase, Iran

# P240 - 1092: THE ROLE OF B SUBUNIT OF RNA POLYMERASE IN RESISTANCE TO CIPROFLOXACIN

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**Background and Aim:** Mutational studies have shown that ciprofloxacin, a member of fluoroquinolones induces SOS response and mutagenesis. In Escherichia coli bacteria DNA gyrase is the main objective of fluoroquinolones. In E. coli exposure to ciprofloxacin resulted in mutagenesis and antibiotic resistance. UmuC, a subunit of the PolV is required for mutagenesis caused by UV rays. The aim of this study was to determine whether the generation of a mutation in β subunit of RNAP could compensate the lack of UmuC in E. coli umuC – strain.

**Methods:** For this purpose, E. coli umuC - strain was used and resistance to ciprofloxacin was generated stepwise. Part of the β subunit (codon 495 to 599) of the RNAP was first amplified by PCR and then sequenced.

**Results:** The results showed that clones with low and medium resistance can be produced from umuC - mutant. A new mutation was found in this region. As a result of this mutation, A 1714 in the rpoB gene changed to cytosine and codon 572 (ATC) → (CTC), the expression of recA and umuD genes was measured by real time PCR, which showed overexpression of these genes.

**Conclusion:** In conclusion, UmuC is required to generate mutants with high resistance to ciprofloxacin and plays an important role in the mutagenesis. Probably change in β subunit of RNAP maybe associated with resistance to ciprofloxacin and it shows the importance of these areas in resistant to rifampin and probably increase in the expression of these genes could be related to the change in the β subunit.

**Keywords:** Ciprofloxacin, RNA polymerase, UmuC, real time PCR, E. coli bacteria

# P241 - 1100: IDENTIFICATION OF VANCOMYCIN RESISTANCE AND INDUCIBLE CLINDAMYCIN RESISTANCE AND INVESTIGATION OF MECA, ERM, MRSA,VAN GENES IN METHICILLIN-RESISTANT COAGULASE-NEGATIVE STAPHYLOCOCCI (MRCONS) CLINICAL ISOLATES OF AHVAZ GOLESTAN HOSPITAL

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**Background and Aim:** An increase in the incidence of methicillin-resistant coagulase-negative staphylococci (MRCoNS) and consequently vancomycin resistant coagulase negative Staphylococci (VRCoNS) had led to using Clindamycin. Clindamycin Resistance may be constitutive or inducible. Inducible clindamycin resistance is detected by disc diffusion test. The aims of this study were to determine the vancomycin resistance and inducible clindamycin resistance, and detect mecA ,van, erm, msrA genes in clinical isolates of MRCoNS from Golestan teaching Hospital in Ahvaz, Iran.

**Methods:** Antibiotic resistance and D test were performed by using Agar Disk Diffusion on a total of 112 collected MRCoNS. The presence of mecA ,vanA, vanB, ermA,ermB,ermC, msrA were determined by PCR and Multiplex – PCR methods.

**Results:** The prevalence of MRCoNS was 63/05% all carrying mecA gene. 25% of The MRCoNS were revealed as VRCoNS, and not all of them present vanA and vanB genes. Also, inducible resistance was not seen. The frequency of phenotype Neg (The strains resisting to erythromycin and sensitive to clindamycin) were 20 (8/17%), which all had msrA gene. 48% of MRCoNS strains revealed structural resistant and out of which, 46 strains possessed ermC gene and 8 and 4 strains had ermA and ermB genes respectivily. ermC showed the highest frequency among constitutive resistance.

**Conclusion:** Identification of clindamycin resistance in Staphylococcus can contribute to treatment success. Therefore, performing D testing is recommended for any staphylococcal infections routinely.

**Keywords:** MRCoNS, vancomycin, D-test, Clindamycin, Inducible Resistance

# P242 - 1103: ANTIBIOTIC RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS CLINICAL ISOLATE FROM A REFERRAL HOSPITAL IN MASHHAD

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**Background and Aim:** Staphylococcus aureus is an opportunistic pathogen and a major public health concern associated with multiple diseases. Methicillin-Resistant Staphylococcus aureus (MRSA) is the one of most commonly isolated organisms from clinical samples which can cause life- threatening infections. Epidemiology of this pathogen has drastically changed in recent years. The emergence and spread of antibiotic resistance makes the treatment of these infections more complicated. In this study, we aimed to determine the patterns of antibiotic resistance among Staphylococcus aureus isolates from a referral hospital in Mashhad.

**Methods:** MRSA was identified by cefoxitin (Rosco, Denmark) disc diffusion. Antimicrobial susceptibility testing was performed on MRSA isolates for eight other antibiotics by disc diffusion method according to CLSI (2015) recommendations.

**Results:** From April 2015 to April 2017, 893 clinical isolates were collected. According to disc diffusion, 330 (36.9%) isolates showed resistance to cefoxitin. Among these isolates, the rate of resistance to erythromycin, clindamycin, ciprofloxacin, gentamicin, Trimethoprim/Sulfamethoxazole and Nitrofurantoin, were 48.2%, 42.1%, 40.3%, 30.1%, 17.4%, and 11.8%, respectively. All isolates were susceptible to vancomycin according to disc diffusion and MIC.

**Conclusion:** Compared to other reports from Iran, our study indicated a moderate rate for MRSA. However, the rates of resistance to generally prescribed antibiotics in these isolates were high. In this situation, it is recommended to monitor the antibiotic resistance in this hospital.

**Keywords:** Staphylococcus Aureus, Antibiotic Resistance Pattern, Mashhad

# P243 - 1104: ANTIMICROBIAL RESISTANCE PATTERN OF PSEUDOMONAS AERUGINOSA IN CLINICAL ISOLATES OF IMAM REZA HOSPITAL IN MASHHAD, THE NORTHEAST OF IRAN

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**Background and Aim:** Despite advance in medical care and introduction of wide variety of antimicrobial agents, life threatening infection caused by Pseudomonas aeruginosa continue to cause complications in hospital acquired infections. The rapid increase of drug resistance in clinical isolates of this opportunistic human pathogen is of worldwide concern. This study was conducted to detect Prevalence and Antibacterial Susceptibility pattern of clinical isolates of P. aeruginosa.

**Methods:** This is an observational study conducted for a period of Twenty-four months which ended on April 2017 at Imam Reza Hospital in Mashhad. P. aeruginosa isolates were collected from various ward of the hospital and then were approved based on morphological characteristics and biochemical tests. Antibiotic susceptibility test was conduct by disc diffusion method according to CLSI (2015) guideline recommendations. Data Analysis was conducted by using SPSS version 16.

**Results:** P. aeruginosa was isolated in 557 cultures. The most resistant drugs included Cefotaxime (73.3%) and Ceftriaxone (66.3%) followed by Gentamicin (39.7%), Ceftazidime (36.1%), Ciprofloxacin (35.3%), Imipenem (31.2%), Cefepime (29.9%), and Piperacillin/Tazobactam (28.3%).

**Conclusion:** This hospital based epidemiological data will help to implement better infection control strategies and improve the knowledge of antibiotic resistance patterns among clinicians. Thus, there is a need for periodical antimicrobial surveillance to monitor the resistance patterns in local hospitals.

**Keywords:** Pseudomonas aeruginosa, Antimicrobial resistance pattern, Mashhad

# P244 - 1106: ANTIBIOTIC RESISTANCE PATTERN OF ACINETOBACTER BAUMANNI CLINICAL ISOLATE FROM A REFERRAL HOSPITAL IN MASHHAD

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**Background and Aim:** Acinetobactor baumannii (A. baumannii) is an important opportunistic pathogen causing a wide spectrum of nosocomial infections. Recently, the increasing resistance rate of A. baumannii to a wide range of antibiotics is causing a serious clinical problem, leading to an increase in morbidity and mortality. The present study is aimed to investigate the epidemiology of Acinetobacter Spp. And its antimicrobial resistance patterns during 2015 – 2017 in Imam Reza hospital in Mashhad.

**Methods:** Acinetobacter spp. isolates were collected from different units of Imam Reza hospital in twenty-four months, April 2015 to April 2017. Detection of these bacteria was done based on morphological characteristics and biochemical tests. Antimicrobial susceptibility testing was performed on A. baumannii isolates for eight other antibiotics by disc diffusion method according to CLSI (2015) recommendations. Data Analysis was conducted by using SPSS version 16.

**Results:** 1629 Acinetobacter spp. were isolated from various clinical samples during this study. The most sensitive drugs included Colistin (98.8%) and Gentamicin (21.9%) followed by Amikacin (11.7%), Trimethoprim/Sulfamethoxazole (6.3%), Cefepime (3.4%), Imipenem (3.3%), Ciprofloxacin (3%), and Piperacillin/Tazobactam (2.7%).

**Conclusion:** Through the constant increase of the cases number, and the difficulty of applying an effective treatment, the above-mentioned strains showed a multiple resistance to antibiotics. Knowing the antimicrobial resistance patterns will help guide the empirical therapy and strengthen interventional infection control measures in Imam Reza Hospital.

**Keywords:** Acinetobacter, antimicrobial resistance patterns, Mashhad

# P245 - 1109: CHANGING THE PATTERNS OF CONSUMPTION OF ENZYMES IN CLAVULIGERUS STREPTOMYCES STRAINS BY ULTRAVIOLET RAY MUTATION IN ISP4 CULTURE MEDIUM

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**Background and Aim:** Actinomyces are prokaryotic microorganisms that are part of a group of bacteria. The proliferation of actinomycetes through non-sex is done by certain spores, or by the division of growth mycelia. In those industries where the production of the product is dependent on microorganisms, it increases the ability to produce and modify other genotypic indices, which leads to lower production costs. First of all, it matters. In this project, Streptomyces clavuligerus DSMZ 738 has been used to increase the production of clavulanic acid. In order to increase the production of clavulanic acid in this bacterium, the mutation method was used with UV radiation at a wavelength of 250 nm and the production rate was measured by HPLC method. The resulting mutations of the strain of parent in the ISP4 strain showed the following changes in production: 1. In terms of Gel, with increasing UV time, the degradation of its degenerate power decreases. 2- In terms of Cit - Trp - VP - Onp - Ure: with increasing UV time and increase of bacterial concentration do not change the degradation power of it. 3- In terms of Ind -Arg: with increasing UV time, the degradation property disappears. 4. Lys: Increasing UV time causes the return of Lys's degradation power 5- In terms of Odc: 30-minute time causes its degradation to be generated.

**Methods:** HPLC.

**Results:** The mutagenicity of these enzymes, Cit-Trp-VP-Onp-Ure Odc, has no effect on Ind-Arg and eliminates the degradation property.

**Conclusion:** The ability to produce and change in other genotypic indices.

**Keywords:** Actinomyost, antibiotics, clavulanic acid, mutagenesis, enzyme, Streptomyces clavuligerus

# P246 - 1120: DISSEMINATION OF INTEGRONS AMONG ACINETOBACTER BAUMANNII STRAINS ISOLATED FROM PATIENTS HOSPITALIZED IN SARI HOSPITALS, IRAN

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**Background and Aim:** Acinetobacter baumanii is an important nosocomial multidrug resistance pathogen that has been associated with complicated infections. The aims of our study were to understand the dissemination of integron genes in A. baumannii strains isolated from patients hospitalized in Sari hospitals in northern Iran.

**Methods:** 260 hospitalized patients in different units of sari hospitals were evaluated by conventional biochemical, antibiotic susceptibility bla -OXA-51 specific PCR in terms of A. baumannii infection during 2015 and 2016. Antimicrobial susceptibility test was done on these isolates by E. test method according to CLSI guidelines 2015. All A. baumannii positive samples were evaluated for the presence of integron genes by PCR method.

**Results:** Among the 260 isolates analyzed by PCR, 104 isolates were A. baumannii positive. Out of 104 isolates 122 (54%) were found to have the integron genes . Among the integron-positive samples, 66 isolates had a class I integrin and 56 isolates had a class II integron cassette. We did not detect class III integrons in isolates of sari hospitals. Also, 38 isolates of A. baumannii had both Integrons 1 and 2, and 22 samples did not have any Integrons.

**Conclusion:** The results of our study compared to other studies in recent years showes a high presence of integrons and high resistance rate to most classes of antibiotics in A. baumannii strains carried Integron cassette.

**Keywords:** Acinetobacter baumannii, Antimicrobial susceptibility, Integron

# P247 - 1121: DETECTIONOF EXTENDED SPECTRUM BETA-LACTAMASES (ESBL) IN SALMONELLA ISOLATES FROM ANIMALS

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**Background and Aim:** Almonella species is an important food-borne pathogen responsible for disease in animals and humans.Extended spectrum beta-lactmase (ESBL) producing organisms create a major problem for clinical therapeutics. The aim of this study was to detect ESBL-producing Salmonella isolates from different animal species by phenotypic methods.

**Methods:** The total number of 74 Salmonella isolates from cattle (n=16) and poultry (n=58) were used in this study. The isolates that were resistant to the third generation cephalosporins by disc diffusion method were selected for further detection of ESBL by double disc synergy test and combined disc (cefpodoxime alone and in combination with clavulanic acid) methods.

**Results:** The screening of ESBL by both methods indicated that all of the isolates are non-ESBL producers. Among non-ESBL producing Salmonella isolates, resistance was observed to ceftazidime andcefotaxime in 14(18.9%) and 19(25.6 % ) strains, respectively.

**Conclusion:** It can be concluded that ESBL productionin Salmonella isolates was not associated with ceftazidime and cefotaxime resistance.

**Keywords:** ESBL production, Double disc synergy test, Salmonella

# P248 - 1122: EVALUATION OF MULTIPLE ANTIBIOTIC RESISTANCE OF SHIGELLA SPECIES

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1. -

**Background and Aim:** Shigella , gram-negative and non-moving basil. Because of the low dose of bacteria infectious, pandemics occur frequently, especially in crowded places with a low level of hygiene. According to foreign and domestic reports, the problem that has emerged over the last few years and has become a health problem is the emergence of antibiotic-resistant strains and the development of multi-drug resistance in these strains.

**Methods:** This study was performed on 384 samples from Tehran Children's Medical Center Hospital over a period of 24 months. Initially, antibiotic resistance was evaluated using differential media and definitive diagnosis of Shigella using culture on the Muller Hilton Agar. Antimicrobial resistance was carried out using a disk diffusion method by MAST antibiotics. Antimicrobial resistance was carried out using a disk diffusion method by MAST antibiotics.

**Results:** The antibiotic resistance test showed the highest antibiotic resistance among isolates isolated from cotrimoxazole antibiotics (88.3%), tetracycline (88.3%), streptomycin (81.4%), and Clindamycin (100%) was seen.

**Conclusion:** This study shows that in our country resistance to antibiotics such as cefalotin, tetracycline, ampicillin, cotrimoxazole, cefazolin, nalidixic acid, etc. has been reported.

**Keywords:** Shigella, Antibiotic resistance

# P249 - 1126: IN-VITRO ANTIBACTERIAL EVALUATION OF NEWLY SYNTHESIZED PYRIMIDIN DERIVATIVE [3,6-DIMETHYL-1-PHENYL-1H-PYRAZOLO[3,4-D]PYRIMIDIN-4-AMINE] AGAINST PSEUDOMONAS AERUGINOSA

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**Background and Aim:** In recent years, the spread of drug-resistant strains of Pseudomonas aeruginosa, as the most common causes of bacterial hospital Infections, threatens public health. Therefore, the use of new antimicrobial medicines to inhibit this pathogen is in urgent demand. In this research project, the inhibitory effects of synthesized pyrimidin derivative against P. aeruginosa.

**Methods:** The broth microdilution method was used to determine the minimum inhibitory concentration (MIC) and the minimum bactericidal concentration (MBC), zone diameters of bacterial growth inhibition were also measured by a disk diffusion method.

**Results:** Results showed inhibition effect of pyrimidin derivative on P. aeruginosa with bacterial growth inhibition = 14.25 mm, MIC = 512 µg/mL and MBC = 2048 µg/mL.

**Conclusion:** This study showed inhibition effect of pyrimidin derivative on P. aeruginosa in-vitro then in-vivo tests need for detection of toxicity and health effects of this Compound.

**Keywords:** Antibacterial Effects, P. aeruginosa, pyrimidin derivative

# P250 - 1128: THE ROLE OF NDM-1 GENE IN CAUSING RESISTANCE TO BETA-LACTAM ANTIBIOTICS IN ESCHERICHIA COLI ISOLATES FROM UTI PATIENTS IN SEMNAN , 2015

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**Background and Aim:** T he incidence of extended spectrum B-lactamase ( ESBL) genes in gram-negative bacteria such as Escerichia coli is on the rise. This enzymes, coding by several genes, plays an important role in causing β-lactam antibiotics resistance in the producing strains of them. The resistance of gram-negative bacteria, such as E. coli as etiologic agents of many infections, especially B-lactams and carbapenems, has increasingly been reported.

**Methods:** This study was conducted to determine the prevalence of NDM-1 gene for conforming beta-lactamases in E. coli isolates through PCR method. In this descriptive-analytic study, 200 E. coli isolates collected from patients with UTI infection and were collected and transfer to Microbiologic laboratory of medicine faculty for diagnosing of agents. Then samples were cultured on bacteriological media and following by other routhin bacteriological tests for identifiing and Susceptibility tests were performance according to standard methods based on CLSI guid lines. Then, frequency of the strains producing extended spectrum beta-lactamases was determined with Disk diffusion(Bauer-kirby) methods by using of four double antibiotic discs with and /without clavoolanic acids (phenotypic methods). Then, DNA was extracted and examined for the existence of NDM-1 gene by PCR.

**Results:** Out of the 200 E. coli isolates, 23 (11.5 %) isolates were ESBL positive, 3.5 % of which were positive for NDM-1 B-lactamase resistance gene.

**Conclusion:** Considering the increasing rate of the ESBLs producing strains, using the appropriate treatment protocol based on the antibiogram pattern of the strains is highly recommended.

**Keywords:** Extended-spectrum β-lactamases, ESBL, E. coli, NDM-1 gene

# P251 - 1132: EVALUATION OF THE TETRACYCLINE RESIDUES IN PASTEURIZED MILKS DISTRIBUTED IN RASHT BY HPLC METHOD

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**Background and Aim:** With developing new methods of animal husbandry and increasing the prevalence of diseases, using of antibiotics becomes common in assurance of growth and prevention of systemic diseases and mastitis in dairy herds. Ignorance or negligence of withdrawal time or using more antibiotics than prescribed, are two common causes of antibiotic residues. Due to the harmful effects of drug residues on human health, it is important to monitor their residues in foods.The specific aim of this study determines the level of antibiotic residue in pasteurized milk in Rasht city.

**Methods:** For this study, which was conducted in 1395, 60 pasteurized milk samples of different brands have gathered from Rasht retailers haphazardly. Screening test performed by Delvotest kit and the positive samples referred for HPLC test.

**Results:** The results of screening test showed the presence of different kinds of antibiotics in 60% of samples. HPLC determined that 30.55% of positive samples were contaminated by tetracyclines more than Maximum Residue Level/Limit (MRL) and other samples had other antibiotics.

**Conclusion:** According to dairy per capita consumption of Iranians, these rates of contamination affect considerable part of population especially vulnerable groups like children, pregnant women, elderly and patients. This research shows the necessity of legislative and food inspecting organizations to control and minimize these kinds of contaminations. More research is recommended on other dairy foods.

**Keywords:** Drug residues, Chromatography, High Pressure Liquid, Milk, Rasht, Tetracycline

# P252 - 1133: THE PREVALENCE OF BACTERIAL INFECTIONS IN THE URINARY TRACT IN DIABETIC PATIENTS

Fahime Omidi[1], Khosro Isazade[2]

1. -
2. -

**Background and Aim:** Urinary tract infection is the second most common infection in the human body. Urinary tract infection is an infection most common among diabetic patients. The most common Escerichia coli bacteria that here a urinary tract infection in both sexes and almost all ages, this study examines the pattern of E. coli isolated from urinary tract among diabetic patients to use antibiotics to treat these infections deals.

**Methods:** Urine cultures were performed using standard methods. All urine samples submitted to the laboratory for culture during a period of 6 months, culture and Eosin methylene blue (EMB), blood agar and differential environment and identify the strain of E.coli, antibiogram pattern of growth inhibition zone in accordance with the standards was. used antibiotic discs company's Padtan Teb and antiserusms polyvalent and monovalan in Mast Diagnostic Kit.

**Results:** Of 34 strains of Escherichia coli isolated from urine culture diabetic patients with urinary tract infection, many females 22(%64/7) and male 12 cases (%35/3) respectively. The age of patients with UPEC from one year to 72 years. Most cases of infection in the age group (55-63) with 20/59% and 6%, in the group Sny64-72year and the lowest frequency in second place in age groups 1-9 year and 2 percent were seen with a frequency of 10-18 years.

**Conclusion:** The results of the antibiotic susceptibility test on the bacteria showed that the most effective antibiotic on gram negative bacteria such as Klebsiella and Escherichia coli were 100% sensitive to nitrofurantoin and resistant to ampicillin.

**Keywords:** Urinary tract infections, Escherichia coli, antibiotic resistance patt

# P253 - 1134: ANTIBIOTIC RESISTANT BACTERIAL INFECTION CAUSES EMBRYONIC DEATH IN IMPERIAL FOWL

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**Background and Aim:** Imperial fowls breeding increased for theirs exhibitions, meats and eggs and Imperial fowls matured around 8 t0 9 months and the hens lay about 140 to 150 eggs in her laying period annually. Some of breeders used setters and hatchery machines for hatching the newborns, so due to a poor biosecurity and late egg accumulation in the farms, different types of G – and G+ bacteria can infect the setters and hatchery environment resulting early and late embryonic infection.

**Methods:** In current study 60 embryonated death eggs and 50 day old Imperial fowls chicks were examined for bacterial investigation and antibiotic resistance test using disk diffusion test.

**Results:** Regarding to the results the most isolated bacteria respectively were Salmonella sp., E.coli sp., Proteous sp., and Kelebciella sp mostly in the infected eggs and S. areous as well as fecal streptococci in the cases of omphalitis

**Conclusion:** Antibiotic resistance tests for all of isolated bacteria showed a different range resistance against common antibiotics included Macrolids (Lincomycin, Erythromycin), Quinolones (Enrofloxacin) Sulfamids (Sultrim, Trimethoprim), Tetracyclins (Oxytetracyclin and Chlorotetracyclin), Aminoglycosids (Gentamycin, Neomycine) and finally B lactams but sensitive to a combination of some common antibiotic and Fosbac too. So it is conclude that poor bio security may prepares resistant bacteria and probable environment, human and food infection.

**Keywords:** Imperial fowls, Embryonic death, Resistant, Bacterial

# P254 - 1165: RELATIONSHIP BETWEEN BERBERINE ON S. AUREUS BIOFILM WITH THE GENE FREQUENCY

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**Background and Aim:** Burn infections are the most important cause of death in burn patients. Staphylococcus aureus is one of the most important bacteria in infectious diseases, The most important cause of resistance to antibiotics in this bacterium is biofilm. the use of medicinal plants has been used to increase the effect of antibiotics. Berberin also contains a large amount of alkaloids, including berberin, which have significant antimicrobial activity. Therefore, the target of this study was to determine the biofilm production rate in Staphylococcus aureus, In the next step, the effect of berberine on reducing the production of biofilm bacteria. Finally, understanding this work could be a way to reduce biofilm production in burn infections.

**Methods:** 80 isolates of Staphylococcus aureus were collected from burn infections. Tracking genes fib.eno,cna,fnbA,fnbB,icaA,icaD,bap,ebps Related to biofilm and genes nucA،mec Related to identification and Resistance to Methicillin The PCR method was used. microplate method was used to measure phenotypic biofilm. Also, the effect of Berberin on biofilm was measured by microtitre plate method.

**Results:** In isolates of Staphylococcus aureus The most frequent gene was eno gene and 100% of the isolates were positive for biofilm production, But the highest percentage of intensity was strong biofilm. After treatment with berberin, the highest percentage of biofilms belonged to medium biofilm.

**Conclusion:** Depending on the results of the biofilm, the berberine was determined That barbaric can cause a reduction in biofilm production So berberine use can be used as a medicinal supplement For more synergies and the impact of antibiotics on the bacteria biofilm production use.

**Keywords:** Biofilm

# P255 - 1168: STUDY OF PREVALANCE OF AACC3 IN CLINICAL ISOLATES OF PSEUDOMOS AEUROGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is a gram negative, multi drug resistant and Biofilm- forming bacterium associated with nosocomial and community – acquired infections, which are hardly treatable with current antibiotics due to large degree of antibiotic resistance. The aim of present study was to determine the relationship of antibiotic with Biofilm - forming capabilities of resistance of clinical isolates.

**Methods:** In this study A total of 75 of P. aeruginosa were isolated different clinical specimens obtained from the major city Burn Center Antibiotic susceptibility tests against Ciprofloxacin, Ceftazidime, Imipenem, Cefepime, were performed using standard method of agar diffusion. The Biofilm - forming assay were achieved with crystal violet microtiter plate method. Finally, the resistant pattern of each antibiotic were analyzed Biofilm – formation powers.

**Results:** According to CLSI standards 36.48% showed resistance against Ciprofloxacin, 43.24% against Ceftazidime, 47.29% against Imipenem, and 87.56% against Cefepime. Meanwhile, 51.35% were sensitive to Ciprofloxacin, 54.05% to Ceftazidime, 35.13% to Imipenem, and 18.91% to Cefepime, compared with ATCC27583 28 which Sensitive to Ceftazidime,23 wich Sensivity to Ciprofloxacin, 26 wich sensivity to Imepenem and 29 wich sensivity to. The MIC was measure in µg/ml (41/33%).

**Conclusion:** As the results show the ability of Biofilm – forming capabilities and antibiotic resistant pattern were correlated clear ly between isolates. The correlation was more obvious in some antibiotics compared with others. The high rate of antibiotic resistance and ability of Biofilm producing is an alarm for public health.

**Keywords:** P. aeuroginosa, Biofilm- forming, antibiotic resistant

# P256 - 1170: EVALUATION OF THE FREQUENCY PLASMID-MEDIATED QUINOLONE RESISTANT GENES IN CLINICAL ISOLATES OF PSEUDOMONAS AEROGINOSA FROM PATIENTS IN KERMAN, IRAN.

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**Background and Aim:** Plasmid genes are responsible for resistance to quinolones and fluoroquinolones, so present study aims to identify quinolone resistance related to qnr and aac genes from clinical isolates of Pseudomonas aeroginosa isolated from clinical samples.

**Methods:** In 2016 and in this sectional study, 60 strains of Pseudomonas aeruginosa were isolated from patients in Kerman hospitals from clinical specimens. Accordingly, antibiotic resistantwas evaluated using Kirby-Bauer and CLSI critera. After DNA extraction, qnrand aac(6)-Ib-cr genes were amplified using Multiplex PCR method.

**Results:** Maximum antibiotic resistance was observed related to Cefexim (80%), Nalidixic acid (75%) and minimum ones were identified as imipenem (25%), ciprofloxacin (35%).10 samples of qnr A (16.66%) and 8 samples of qnrB (13.33%) as well as 7 samples of qnrS (11/66%) were positive and 5 samples of aac(6)-Ib-cr (8/33%) were positive.

**Conclusion:** Obtained results revealed that the prevalence of the tested resistant genes from clinical samples is obviously notable. Among the 3 evaluated genes, qnrA was at the highest levels. According to the role and importance antibiotic resistance in public health, more new researches at regional and national level about qnr resistant genes are very important and on the other hand it is necessary that our present information banks to be completed in a better way and present antibiotic resistant patterns to be compared related to the above mentioned genes.

**Keywords:** Pseudomonas aeruginosa, PCR, qnr, aac(6)-cr, antibiotic resistance

**Applied Microbiology (Microbial Biotechnology- Industerial Microbiology-The Environmental Microbiology, Water and Wastewater)**

## P257 - 2: ISOLATION AND IDENTIFICATION OF BACILLUS DEGRADING HYDROCARBONS FROM WASTEWATER OF SHOUPAK FACTORY

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**Background and Aim:** This study has been aimed to investigate the role of microorganisms in biodegradation of contaminants in the detergent industry

**Methods:** A total of 25 wastewater samples from a depth of 3-2 cm from the well and after pouring in Falcon sterile bed in a bag of ice was transferred to the azad University of Tonekabon Laboratory. And be kept in the refrigerator at 4 ° C. First, to remove non-spore forming bacteria at 80 ° C for 5 minutes in the oven heat saw Then, homogenizing effluent pipes containing 200µl culture medium was inoculated Nutrient Broth enrichment for Bacillus isolated from the environment for Nutrient Broth were cultured in Bacillus Medium After purification the road of growth and biochemical properties, amylase, citrate, KOH and catalase.

**Results:** Molecular identification of isolates by 16S rRNA gene amplification by PCR was performed using specific primers. The culture MSM (Mineral Salt Medium) containing benzene and benzene that combines the functionality of isolates from the biodegradation of contaminants is assessed. 5 isolates of Bacillus in this study were isolated after two molecular species were identified as Bacillus cereus and Bacillus toyonensis that had the most active bio-degradable.

**Conclusion:** According to tests carried out it can be concluded that Bacillus of effluent detergents are able to analyze benzene, which is carcinogenic substance were detected.

**Keywords:** Detergent wastewater, Benzene, Biodegradation, Microorganism, Bacillus, Molecular identification

# P258 - 6: DECOLORIZATION OF TEXTILE AZO DYE CONGO RED USING WET AND DRY BIOMASS OF NEUROSPORA SP. UTMC 5041

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**Background and Aim:** Wastewater of textile industries is a worldwide problem. The aim of this study was to examine the potential of the dry and wet biomass of Neurospora sp. UTMC 5041 to decolorization of Congo red, a diazo dye used in textile industry.

**Methods:** The fungus Neurospora sp. UTMC 5041 used in this study preserved in University of Tehran Microorganisms Collection (UTMC). To grow the fungal biomass, the growing cells on PDA solid agar transferred to a flask containing liquid PDB. After incubation at 30˚C, 48 h, 170 rpm, the biomass was separated and used as wet biomass. It was dried in an oven at 50˚C, 24 h and was used as dry biomass. These two types of biomasses were inoculated in Congo red solutions (100-600-1000 mg/L-1) for 1 hour. After centrifugation (10 min, 2630×g) the absorbance of the supernatant was measured at 500 nm.

**Results:** The wet fungal cells of Neurospora sp. UTMC 5041 showed a higher biosorption rate in comparison with the dry cells. The results showed that the wet biomass could decolorize 93% of solution contained 100 mg.g-1 Congo red, while the dry biomass could remove only 52% of it. At higher dye concentrations, the wet biomass could remove dye up to 77% while the dry type removal was 67%.

**Conclusion:** The results indicate that the wet biomass of Neurospora sp. UTMC 5041 can be more useful in the biological treatment of dyes containing wastewater.

**Keywords:** Decolorization, azo dyes, Congo red, Neurospora sp, wet biomass

# P259 - 9: ISOLATION AND SCREENING OF INDUSTRIALLY IMPORTANT FUNGI FROM THE SOIL AND AIR OF TEHRAN FOREST PARKS IN IRAN.

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**Background and Aim:** Saprophytic fungi because of simple caltivation and endure difficult and specific conditions can be produce high amount of using extra cellular enzymes with industrial potency. The present study is an attempt to isolate the fungi from the soil and air of Tehran forest parks and screen them for the production of some very important hydrolytic enzymes.

**Methods:** More than 350 fungal isolates were isolated that were characterized about 280 isolates of them.Most of isolates were belonged to genuses Aspergillus sp., Penicillium sp. , Fusarium sp. ,Mucor sp. ,Rhizopus sp.. From this fungal isolated 19 isolated were screened for the production of extracellular enzymes such as amylase, pectinase, invertase, cellulose, protease, lypase. At the first step, isolated fungi were investigated enzyme activity base on quality.At the second step, were assayed pectinase enzymatic acivity (enzyme production in submerged medium containing pulp and pectin apple as the sole carbon sources ) in isolates contain pectinase .

**Results:** Most of fungal isolated were produced pectinase, lipase, protease, and amylase. And isolates Of (E14, E03,E02,E01) were produced invertase enzyme and only isolated of (E13) was produced Cellulase enzyme.in isolates contain pectinase ,that revealed greater activities in (0/79 (U/ml) and 0/71(U/ml)) in Cladosporium sp. and Penicillium sp. respectively.

**Conclusion:** In this study showed that the soil and air of Tehran forest parks can be a very good source of industrially important enzymes.

**Keywords:** Tehran forest parks, Industrially enzyme, soil and air

# P261 - 49: A REPORT PREVALENCE ANTHRAX IN THE WESTERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015

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**Background and Aim:** Zoonotic diseases constitute a public health problem throughout the world. Anthrax is a potentially fatal zoonotic disease and is an important zoonotic disease which is primarily a job-related infection caused by Bacillus anthracis. The diagnosis of cutaneous anthrax (CA) may be very difficult, particularly in atypical presentations and non-endemic regions. Aim this study, anthrax cases seen between 2010 –2015 in the Western Cities Area of Kermanshah Province.

**Methods:** Medical records of infected in patients with CA (Clinical, Para clinical information and pathological diagnosis of disease CA such as microbiologic procedures) who had been operated in referral Health Centers Western cities areas of Kermanshah province (Ravansar,Javanrood,Pavehe and Salasebabajany) were collected in the period six years (2010 – 2015). one patients with CA were included in this study.

**Results:** Results indicated that All patient's referent one patient were who diagnosed CA in 4 cities medical center registries at six years' period respectively, per 100,000 person.one patient had a history of animal contact.patient was initially misdiagnosed with insect bites or angioedema.Cultures from the lesions were positive for Bacillus anthracis in one case.Gram stain from the lesions revealed Gram-positive rods in one case.Patient were diagnosed by clinical presentation and a history of contact with sick animals or contaminated animal products.

**Conclusion:** CA is a very contagious and important infectious disease worldwide. Early and accurate diagnosis dramatically affects the prognosis of the disease. The diagnosis of CA may be difficult, especially in atypical presentations and non-endemic areas. Thus, CA should be kept in mind, especially in these situations.

**Keywords:** Bacillus anthracis, Zoonotic diseases,Western Cities Area, Kermanshah Province

# P262 - 72: CALCULATION OF MINIMUM INHIBITORY CONCENTRATION (MIC) AND MINIMUM BACTERICIDAL CONCENTRATION (MBC) IN STREPTOCOCCUS INIA AND LACTOCOCUS GARVIEA BACTERIA USING AQUA START DISINFECTANT

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**Background and Aim:** As standards for determining antimicrobial sensitivity, MIC (Minimum Inhibitory Concentration) and MBC (Minimum Bactericidal Concentration) are used to test the effects of disinfectants on bacteria. Streptococcus inia and Lactococus garviea are introduced as the prevalent bacteria in pisciculture centers of many countries including Iran. It is estimated that these bacteria cause enormous irreversible economic damages (more than 150 million dollars a year) worldwide.

**Methods:** Tests for measuring MIC and MBC were carried out using the McFarland method under sterilized conditions and a hood supplied by the faculty of veterinary medicine of Tehran University. After preparing the culture medium, 8.9 and 4 of the pure bacteria were put in a tube through serial dilution from the master vessel. MBC was calculated using the smallest colony in the culture medium.

**Results:** The lowest MIC in S.iniae was obtained with the 8.9 concentration of Aqua Start and the highest MIC in L.garviea was observed with the 4 dose of Aqua Start. In addition, the lowest MBC was obtained with the 8.9 concentration of Aqua Start in S.iniae and the highest MBC was obtained with the 4 concentration of Aqua Start in L. garviea.

**Conclusion:** The MIC results revealed that the proposed concentration, i.e. 4ppm, has an inhibitory effect on pathogenic bacteria in the pisciculture industry.

**Keywords:** Disinfectant, minimum inhibitory concentration, pisciculture, bacterium

# P263 - 98: WATER SOURCE AS RISK FACTOR FOR HELICOBACTER PYLORI INFECTION AND THE EFFECT OF PROBIOTICS IN TREATMENT

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**Background and Aim:** Over the preceding years and to date, the definitive mode of human infection by Helicobacter pylori has remained largely unknown and has thus gained the interest of researchers around the world. Numerous studies investigated possible sources of transmission of this emerging carcinogenic pathogen that colonizes >50% of humans, in many of which contaminated water is mentioned as a major cause. In this review Article, we focused on water as a possible source of transmission of H. pylori and discussed some experimental findings indicating the possibility of detecting viable H. pylori in water.

**Methods:** This study is review article based on databases including SID, Iranmeddex, Scopus, PubMed, as well as articles and reviewed the letters that have met the inclusion criteria, were examined.

**Results:** Infection with the bacterium which leads to chronic gastritis, peptic ulceration, gastric cancers and gastric malt lymphoma has been reported to follow a pattern linked to geographic and socio-demographic factors. However, given the accruing evidence, it is still important to seriously consider contaminated water as one of the likely candidate sources and deal with it effectively.

**Conclusion:** Knowing the source of infection is a necessary step toward prevention. infection with H. pylori in the developing countries has declined owing to the increased awareness of the possible root of the problem and recommends boiling water to prevent infection. In most cases, such practice was initially promoted by the respective health authorities to fight off more serious forms of infections caused by water-borne microorganisms.

**Keywords:** Epidemiology, Infectious diseases, Climate change, Water crisis

# P264 - 109: OPTIMIZATION OF FORMALDEHYDE BIODEGRADATION BY NATIVE BACTERIA

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**Background and Aim:** Formaldehyde is toxic and carcinogenic compounds in the chemical industry and has extensive applications, it emissions harmful to the environment, health and environmental impacts involved. The purpose of this study was to determine the optimal parameters in order to enhance the efficiency of formaldehyde biodegradation by native microorganisms.

**Methods:** In order to optimize the biological decomposition of formaldehyde from the bacterium Bacillus sp. Safa. Toneka isolated from the wastewater treatment plant was used to produce color.optimize the physicochemical conditions affecting the biodegradation at a fixed concentration of 2000 ppm of formaldehyde with important changes in environmental factors such as pH, temperature, aeration environment and supply of glucose to the Shaker device was examined. Then the absorbance of the sample was measured by a spectrophotometer at 600 nm.

**Results:** The results showed that, pH 5.8, 42°C and 200 rpm (shaker speed), 1.5 g of glucose provided optimal conditions for concentration was 2000 formaldehyde biodegradation using this bacteria.

**Conclusion:** The results of this study confirm the importance and effectiveness of native bacteria in the refinement of environments contaminated with this compound is the formaldehyde pollution. To achieve high performance biodegradable formaldehyde, identifying optimal use of this compound was purified by bacteria is important.

**Keywords:** Optimization, Formaldehyde, Biodegradation

# P265 - 110: BIODEGRADATION OF FORMALDEHYDE BY ISOLATED BACTERIA FROM WASTEWATER OF PAINT PRODUCTION LANT PARS NEGIN NAMA IN MAZANDARAN PROVINCE

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**Background and Aim:** Formaldehyde is a toxic and hazardous compound and known as one of the mutagenic and carcinogenic agents in living creatures. Among a variety of procedures designed for the elimination of contamination, biological removal is capable of converting pollutants to innocuous and nontoxic substances using less amount of energy and chemicals. This study was aimed biodegradation of formaldehyde by the bacteria isolated from Wastewater of Paint Production (Pars Negin Nama).

**Methods:** In this analytical study, samples were taken from paint production factory effluent. The samples were added to CM and MSM media to isolate bacteria. The bacteria were analyze based on morphological and biochemical characteristics. The bioregdaration ability of bacteria in MSM containing formaldehyde media was evaluated in absorbance at 600 nm using a spectrophotometer. The identity of bacteria was determined based on sequencing of 16SrRNA.

**Results:** The result showed that the best formaldehyde degrading bacteria belonged to a new strain referred to as Bacillus sp. Safa. Toneka. This strain was able to degrade formaldehyde 1500 ppm formaldehyde in MSM agar and 2000 ppm formaldehyde in MSM broth after 48 hour.

**Conclusion:** The results of the present research showed the ability of bacteria in the terms of the elimination of formaldehyde in contaminated areas.

**Keywords:** Biological degradation, Formaldehyde, Spectrophotometer

# P266 - 111: PRODUCTION OF VIT B12 BY ISOLATED BACTERIA FROM SOIL AND THEIR CONFIRMATION BY HPLC

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**Background and Aim:** Vitamins as micro nutrients are important for human growth. They belong to the water and fat soluble, which can produce by bacteria.

**Methods:** Totally, 50 soil samples have been collected from agricultural and non- agricultural soils in Shiraz province. The samples were serially diluted and cultivated on Nutrient agar. The plates were incubated at 37ºC for 24 hrs and the colonies were purified. The purified colonies were subjected for production of VitB12 using two different techniques: 1) Adding the suspected colonies to pre medium cultivation 1, incubation at 35º C for 4 days using gas pak, then they were propagated in second medium with corn extract, glucose, $CoCl_2$ •$6H_2$ O, for 80hrs at 35ºC under anaerobic condition. Finally, betain were added to the solutions, they were kept for 4days at 35ºC. 2) The selected colonies were Freeze dried, and then the biomass was treated in sodium cetate buffer pH 4.8. Total Vit B12 was extracted by boiling with 20mg KCN for 30 mins at 98ºC. The extract was centrifuged at 5000 rpm for 10 min and the supernatant were analyzed using HPLC. Finally, the isolates were identified using molecular techniques.

**Results:** Totally, 28 different types of colonies were selected , Out of all, one of the isolates had ability to produce Vit B12, which is confirmed by HPLC. The selected isolate were identified as Propionibacterium freudenreichii

**Conclusion:** Although bacterial isolate from soils have different ability, production of Vit B12 is an important capability, which can be used in industry.

**Keywords:** Vit B12, HPLC, Propionibacterium freudenreichii

# P267 - 134: PRODUCTION OF HEAVY POLYHYDROXYBUTIRATE AND CROTONIC ACID FROM ADVENELLA IN FREE AMMONIUM MEDIUM.

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**Background and Aim:** Polyhydroxybutyrate has application for medical and pharmacology, the aim of this study was to obtain novel polymer from new strain with different characteristic.

**Methods:** This isolate was cultured in a medium with free ammonium and after 24 hours, the medium was centrifuged and the pellicles were washed with alkaline solution of sodium hypochlorite. Afterwards, the white solution was centrifuged and washed by distilled water followed by washing by alcohol and acetone with equal amounts ratio in order to remove the protein and lipid impurities. Finally, the white slurry was dried at the oven with 50 °C as polyhydroxybutyrate. This polymer, transformed to crotonic acid, with concentrated sulfuric acid followed by incubation in water bath at 100°C for 10 minutes. After cooling, the crotonic acid were determined by Uv adsorption and the polymer detected by FTIR.

**Results:** Microscopic observation with sudan black staining (3% in 60% of ethanol) determined the granule of polyhydroxybutyrate in Advenella. A nitrogen fixing bacterium. Moreover, the recovery of polyhydroxybutyrate from cell biomass was found to be 54% of cellular dry weight. The chain were determined as heavy polymer

**Conclusion:** In this research, Advenella was successfully used for industrial production of heavy chain PHB and converted to crotonic acid.

**Keywords:** Drug Delivery Systems, Polymers, Polyesters

# P268 - 146: REMOVAL OF SILVER FROM PHOTOGRAPHIC WASTEWATER EFFLUENT USING ACINETOBACTER BAUMANNII BL54

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**Background and Aim:** Acinetobacter baumannii BL54, a silver (Ag) resistant micro-organism was isolated from clinical samples.

**Methods:** The strain BL54 removed a high quantity of silver (2.85 mg/g biomass) from photographic wastewater effluent. Treatment of the cells with 10 mM EDTA or agitating the culture did not affect the removal process, while altering pH of the wastewater or pre-treating the cells with 0.5 mM 2,4-dinitrophenol (DNP), 20 µM N,N'-dicyclohexylcarbodiimide (DCC), 25 µg/mL cefotaxime, and polymyxin-B resulted in considerable decrease in removal of silver by the organism.

**Results:** Dead cells, or a Ags plasmid-cured derivative (BL54.1) removed little silver, which was mainly surface bound.

**Conclusion:** The results, compared with accumulation of Ag by a sensitive culture of Escherichia coli K12 J53.2, suggest that A. baumannii BL54 has good potential for bioremediation of silver from photographic wastewater effluents. Key words: Acinetobacter, silver resistance, silver removal.

**Keywords:** A. baumannii, bioremediation, silver resistance, plasmid

# P269 - 147: HORIZONTAL TRANSFER OF ANTIBIOTIC RESISTANCE GENES AMONG GRAM NEGATIVE BACTERIA IN SEWAGE AND LAKE WATER AND INFLUENCE OF SOME PHYSICO-CHEMICAL PARAMETERS OF WATER ON CONJUGATION PROCESS

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**Background and Aim:** The aim of this study was to determine transfer of the antimicrobial resistance genes from resistant to susceptible gram negative bacteria in the sewage and lake water by conjugation process and to determine the influence of some physico-chemical parameters of sewage and lake water on the transfer of these resistance genes.

**Methods:** We isolated 20 liter of each sewage and lake water from coconut area within university campus and Lingambudi lake respectively in Mysore city, India, during monsoon season and studied different physical parameters of the water samples like pH,temperature, conductivity, turbidity and color as well as chemical parameters like BOD, COD, field DO and total chloride ion. The gram negative bacteria were isolated and identified from the above water samples using microbiological methods and their sensitivity to different antibiotics was determined by disc diffusion break point assay. Conjugation between tw0 antibiotic resistant isolates Pseudomonas aeuginosa and E.coli as donor and E.coli Rifr (sensitive to antibiotics) as recipient were carried out in 5ml sterile sewage and lake water.

**Results:** Horizontal transfer of antibiotic resistance genes by conjugation process revealed transfer of Gm, Te and E resistant genes from P. aeruginosa to E.coli Rifr recipient with mean frequency of ± 2.3 x 10-4 in sewage and ± 2.6 x 10-6 in lake water respectively. Frequency of conjugation in sewage was two fold more as compared to lake water ($p<0.05$).

**Conclusion:** Due to selective pressure in sewage (presence of antibiotics), the isolates from sewage were more resistant to different antibiotics as compared to those from lake water.

**Keywords:** Antibiotic resistance, Gene transfer, Conjugation

# P270 - 165: EVALUATION THE EFFECTIVENESS OF CHEMICAL AND BIOLOGICAL SURFACTANTS IN REMOVAL OF OIL BY CRYPTOCOCCUS SP.

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**Background and Aim:** The recent study was taken to evaluate common chemical and biological surfactants impact on crude oil biodegradation by three Cryptococcus sp. as yeast eukaryotic microorganism.

**Methods:** Tween80 as a chemical and rhamnolipid as a biological surfactant was selected for the study. In Bushnell-Haas medium with 1% crude oil as the sole carbon source, three species of Cryptococcus were cultured individually and with 0.01% rhamnolipid and 0.2% tween 80. After 21 days of incubation, removal rates were analyzed by Total Petroleum Hydrocarbon (TPH) assay.

**Results:** TPH results for samples without surfactant for Cryptococcus adeliensis, Cryptococcus uzbekistanensis and Cryptococcus aerius were 43.55, 42.43 and 36.34%, respectively. Oil removals in the presence of 0.2% tween80 were 52.21, 50.28 and 38.33%, respectively. Almost 10% increase in removal rates were achieved comparing to cultures without surfactants for C. adeliensis and C. uzbekistanensis. However, tween80 has no significant effect on oil removal by C. aerius. Oil remediation in the presence of 1% rhamnolipid were 38.33, 36.11 and 40% for C. adeliensis, C. uzbekistanensis and C. aerius, respectively. These results could point to rhamnolipid toxicity, resulting in a negative impact on their biodegradation potential.

**Conclusion:** According to the results, the presence of a surfactant or a biosurfactant may increase the biodegradation rate due to increasing the availability of biodegradable carbon source, although this may not applicable to all microorganisms.

**Keywords:** Crude oil, Surfactant, Biosurfactant, Yeast, Cryptococcus sp., Biological removal

# P271 - 170: ERADICATION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS USING BENEFICIAL BACTERIA IN THE SOIL

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**Background and Aim:** Actinomycetes comprise an extensive and diverse group of Gram-positive, aerobic, mycelial bacteria that play an important ecological role in soil cycles. Many are well known for their economic importance as producers of biologically active substances, such as antibiotics, vitamins and enzymes. New broad spectrum antimicrobial agents are urgently needed to combat frequently emerging multi drug resistant pathogens.

**Methods:** Soil samples were plated following the dilution plating method on starch casein agar. Actinomycetes were identified to the genus level based on microscopic morphology of the vegetative and the aerial mycelium grown on yeast–malt extract agar (YME) or water agar for 21 days at 28°C. Hickey-Tresner agar method use Antibiotic production activity of the isolated Streptomyces was assessed against MRSA . The zone of inhibition against each test organism was noted. In disc diffusion method, nutrient agar medium was prepared and sterilized followed by proper pouring into petri plates under aseptic conditions in a laminar air flow. Petri plates were kept for setting of medium for some time. The supernatant of production medium was collected and stored at 40 C. Antibiotic activities were assayed for the supernatants using whatman paper discs.

**Results:** The Streptomyces isolated from soil sampel , good antimicrobial effect on pathogenic bacteria methicillin-resistant Staphylococcus showed.

**Conclusion:** The Streptomyces spp produce antibiotic compounds which can be used as antibacterial agent.

**Keywords:** Beneficial bacteria,Soil, Antibacterial agent, MRSA

# P272 - 182: BIODEGRADATION OF CRUDE OIL BY A CO-CULTURE OF INDIGENOUS BACTERIA

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**Background and Aim:** Oil pollution is a serious threat to the environment and all creatures, and there is a necessity for removing the contaminants from the environment. One way to eliminate this kind of pollution is microbial biodegradation.

**Methods:** For this reason, the petroleum contaminated soil in Yazd region was used to isolate indigenous bacteria. To isolate bacteria, salt culture medium containing the oil as the sole carbon source was used. In order to adapt indigenous bacteria with high concentrations of the oil, oil concentration was increased gradually and the pre-culture medium was reduced. All media were incubated for a week at 30 ° C and 150 rpm. To examine the growth of bacteria, turbidity and culture-based methods were used. To identify the best isolates, the biochemical tests were done.

**Results:** The results showed that four isolates were able to grow at a concentration of 8% crude oil while in the mixture consortium they were able to grow at a concentration of 16% crude oil. Results showed that the two isolates belonged to the Alcanivorax and Pseudomonas families, and two isolates belonged to Alkaligenes family.

**Conclusion:** This bacterial consortium has a very good potential for the removal of the oil pollution of the environment.

**Keywords:** Crude Oil, Microbial Biodegradation, Environment pollution

# P273 - 206: EVALUATION OF MOLYBDENUM RESISTANCE OF ACIDITHIOBACILLUS FERROOXIDANS STRAIN ZT-94: A VALUABLE ABILITY IN BIOTECHNOLOGICAL APPLICATIONS

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**Background and Aim:** Bioremediation is the biological processes to solve environmental pollution by living organisms. Today, bioremediation of heavy metals by bacteria is a new technology that use of the interactions between bacteria and metals. Very few of bacteria are able to survive and adapt in hard environments. Metal resistance of microorganisms is an important subject in biotechnology processes. Acidithiobacillus ferrooxidans is one of the resistant bacteria to acidic conditions. This bacterium is a valuable microorganism in the bioleaching process that to be able to use the sulfur and iron in the environment as an energy source. The various heavy metals in the ores and sensitivity of the bacterial iron oxidizing enzymes into the metals can reduce its activity.

**Methods:** The molybdenum resistance of Acidithiobacillus ferrooxidans strain ZT-94 was studied in the concentrations range from 10mg/l to 100mg/l. The molybdenum salt was Na2MoO4.2H2O. APH was used to minimal inhibitory concentration (MIC) and the solid medium was used minimal bactericidal concentration (MBC) tests. The amount of initial inoculation of bacteria was 10% of the fresh medium (48h, 1.75× 107cell/ml).

**Results:** The results showed that molybdenum does not have inhibitory effect on the activity of the iron (II)- oxidizing enzyme in Acidithiobacillus ferrooxidans strain ZT-94 up to concentration 20mg/l. The MBC of molybdenum was 60mg/l, which can be due to inhibition of iron (II)-oxidizing enzyme by molybdenum in this bacteria.

**Conclusion:** Thus, Acidithiobacillus ferrooxidans strain ZT-94 can be a suitable candidate for biotechnology processes due to the molybdenum resistance of this bacterium and high amount of molybdenum in the ores.

**Keywords:** Acidithiobacillus ferrooxidans, Molybdenum, Resistance, Bioremediation

# P274 - 225: OPTIMIZATION OF S-LAYER PROTEIN PURIFICATION FROM DEINOCOCCUS RADIODURANS WITH THE RESPONSE SURFACE METHOD

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**Background and Aim:** One of the properties of bacteria s-layer proteins is self-assembly feature that is considerably interests of researchers for using as biotemplates. These proteins have many functions in nanobiotechnology and medicine. S-layer proteins of Deinococcus radiodurans are one of the best self-assemble systems between other proteins that have an important role in fabrication of nanowires. Accordingly, first it is necessary to purify these proteins. The purpose of this research is optimization of s-layer protein purification from D.radiodurans with the response surface method.

**Methods:** First, three factors of SDS concentration, incubation time and mass percent in five levels were considered and 20 runs were designed by Design Expert software with central composite method. Each run includes microbe culture, mass cell preparation, microbe incubation in certain SDS concentration and time and mass percent, separation bacteria from detergent with centrifuge at 5000g, sedimentation of s-layer proteins from detergent solution with centrifuge at 20000g, determination of protein concentration and protein purity by Bradford and SDS-PAGE methods respectively. Finally, the data obtained were analyzed.

**Results:** The optimization results of factors are 5.49% SDS concentration, 7.95% mass percent and 3 hours incubation time. At optimized conditions the protein concentration and purity percent were obtained 0.40 mg/ml and 44% respectively.

**Conclusion:** Analysis of the results demonstrated that at 95% confidence level, the effect of detergent concentration factor on the purified protein percent was more than other factors.

**Keywords:** Deinococcus radiodurans, surface layer protein, purification, optimization

# P275 - 268: SURVEY OF MICROBIAL QUALITY IN BALLAST WATER OF COMMERCIAL SHIPS ENTERING BUSHEHR PORT, ALONG THE PERSIAN GULF

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**Background and Aim:** Approximately 90% of the world's commodities were done by international maritime industry transports. One of inadvertent subsequences of this trade is the transport and delivery of organisms from one location to another via ballast water, which is carried by vessels to control draft, stability and trim.

**Methods:** The purpose of this study was to survey microbial quality in ballast water of commercial ships entering Bushehr port.

**Results:** Total coliform, Fecal coliform, Pseudomonas and HPC bacteria ranged from 0-500, 0-17, 4-900 MPN/100ml and 3100-8930 CFU/ml respectively. Four samples from all contained E. coli and all samples were negative for E. coli O157:H7.

**Conclusion:** Ballast waters discharged to coastal areas of Bushehr port contained bacteria that have the potential to be toxic for humans and coastal ecosystems. In a prolong period the ballast water has the potential to change bacteria communities in marine environments also can be pathogenic for humans and coral reefs where ships discharge their ballast water. So, more research is essential to characterize the changes that nonindigenous microorganisms including potential pathogens, may affect in receiving waters.

**Keywords:** Ballast water, Bushehr, Commercial ships, Microbial quality, Persian Gulf

# P276 - 277: EVALUATION OF PYRENE AND TETRACOSANE BIODEGRADATION BY ASPERGILLUS PSEUDOFELECTUS IN THE PRESENCE OF VARIOUS SURFACTANTS

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**Background and Aim:** Molds have a great ability in biodegradation of high molecular weights (HMW) petroleum hydrocarbons. The aim of this study was evaluating of Aspergillus pseudofelectus potential for HMW's hydrocarbons degradation.

**Methods:** HG-02 isolate was screened from a contaminated soil and identified by ITS gene. The oil degrading ability of HG-02 was confirmed by Total Petroleum Hydrocarbon (TPH) assay on the Bushnell-Haas minimal medium containing 1% crude oil as a carbon source. Growth and degradation rate of HG-02 was measured in presence of pyrene (HMW's aromatic) and tetracosane (HMW's aliphatic). Finally, the degradation rate was studied under similar conditions in presence of tween-80 (0.2%) triton X-100 (0.2%) and rhamnolipid (0.01%).

**Results:** Eight different mold strains were isolated and HG-02 was selected as superior strain based on the TPH assay. The molecular identification showed that the HG-02 had 100% similarity to A. pseudofelectus. The results of TPH for crude oil, pyrene and tetracosane removal showed that the A. pseudofelectus could degrade these compounds about 52.97%, 49.06% and 55.73% in 21 days, respectively. Triton X-100, Tween-80 and rhamnolipid raised the biodegradation of crude oil, pyrene and tetracosane to 60.92%, 53.47%, 66.88% and 64.89%, 57.39%, 70.78% and 68.86%, 60.31%, 75.24%. Our results demonstrated that synergistic effect of A. pseudofelectus in combination of 0.01% rhamnolipid could remove about 70% of heavy petrochemical compounds.

**Conclusion:** According to the results, surfactants could increase the rate of petroleum hydrocarbons degradation but they have more impact on tetracosane rather than pyrene and degradation rate could be improved in combination of mold and surfactant.

**Keywords:** Pyrene, tetracosane, Aspergillus pseudofelectus

# P277 - 285: A PHYLOGENETIC STUDY OF VIBRIO PARAHAEMOLYTICUS ISOLATES IN IRAN AND COMPARING THEM WITH THOSE OF THE WORLD

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**Background and Aim:** Vibrio parahaemolyticus is one of the important species in genus Vibrio. These halophilic bacteria are found in seawater and coastal environments. These species are transmitted to humans through seafood like oysters and shrimps and cause both severe gastrointestinal and extraintestinal infections. The aim of this study was to investigate phylogenetic isolates of Vibrio parahaemolyticus in Iran and in other parts of world, recorded in GenBnak, using the software called Molecular Evolutionary Genetics Analysis (MEGA7).

**Methods:** In this study, three V.parahaemolyticus isolates (two isolates from the Persian Gulf and one isolate from the Caspian Sea) were compared with seven isolates of these bacteria in other parts of the world (South Korea, India, China, Chile, Seri Lanka, Bangladesh, Thailand) using Maximum Likelihood in the software MEGA7. The comparison was performed on the basis of 16SrRNA gene.

**Results:** This study showed that the two V.parahemolyticus isolates from the Persian Gulf are similar to each other. They are also nearly similar to those from other parts of the world. However the isolate from the Caspian Sea was totally different from both Persian Gulf isolates and those in other areas.

**Conclusion:** The phylogenetic analysis of isolates recorded in the GenBank shows that the isolate from the Caspian Sea differs from those in the Persian Gulf and those in other parts of the world in 16SrRNA gene.

**Keywords:** Vibrio, parahaemolyticus, phylogenetic, Iran and 16SrRNA gene

# P278 - 305: CONVERSION OF NITRATE TO N2 GAS BY IMMOBILIZED BACTERIAL ENZYMES ON VERMICULITE

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**Background and Aim:** Nitrate pollution in drinking water becomes a serious problem in most of the countries. Biological denitrification is a safe method for conversion of nitrate to N2. Nitrate reductase (NRase) is the most important enzyme in denitrification, which has 3 types in bacteria, based on their structures and localization in cell. Vermiculite is a hydrous phyllosilicate mineral with several layers for immobilization of bacteria and enzymes.

**Methods:** The periplasmic NRase enzyme (Nap) was extracted from Pseudomonas stutzeri by TES buffer. The support (vermiculite) was soaking into a solution of the extracted enzyme and was incubating to allow time for the physical adsorption to occur. Then washed out the vermiculites, nitrate solution was added and denitrification rate was determined by adding reagents. Some particles of vermiculites were used for FTIR analysis to show the enzyme immobilization and SEM analysis for detecting its nano-multi-layer structure.

**Results:** The immobilized enzyme reduced nitrate for 12 days and during this period 180 milligram nitrate was converted to N2 gas. Special peaks for proteins were appeared in FTIR graph for vermiculite sample, so that confirmed the enzyme immobilization on the vermiculite. Layer thickness of vermiculite was about 20nm in the SEM images.

**Conclusion:** The novelty of this study was using vermiculite as the support for NRase enzyme immobilization and designing a bio-filter for denitrification which can be used in aerobic condition for continuous processes.

**Keywords:** Denitrification, Nitrate Reductases, Pseudomonas stutzeri, Immobilization

# P279 - 311: BIODEGRADATION OF COMMERCIAL POLYESTER IMPRANIL (DLN) BY RHODOTORULA MUCILAGINOSA

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**Background and Aim:** Plastics have changed the world of industry due to their stability, resistance, physical strength and easy production with low cost. Impranil DLN is a kind of plastics used in a wide variety of industries and commercial applications such as textile, aircraft fabric coating, etc. Today, plastics and their derivatives become one the most pollutants in the world. The current study focused on capabilities of yeast strain,NS-12, to degrade Impranil DLN as sole carbon source.

**Methods:** The isolation from oil sludge was done and several isolates was achieved. Enzymatic profile assays related to biodegradation of plastics like lipase, urease and protease was investigated and NS-12 yeast strain was selected as a superior strain and it was identified based on the ITS gene sequencing. Nominated strain was able to grow on minimal medium(M9) containing 1% Impranil DLN as sole carbon source. Finally, qualitative and quantitative assays were evidenced to evaluate biodegradation of Impranil DLN for NS-12.

**Results:** Selected strain was identified as Rhodotorula mucilaginosa with 100% homology through PCR and ITS gene sequencing. R.mucilaginosa enzyme assays demonstrated that this strain was capable to produce extracellular esterase and urease but not protease. Observation of clear zones on impranil plates containing 1% Impranil DLN represented positive qualitative test. Also, R.mucilaginosa could utilize Impranil DLN as sole carbon source and degrade 100% of it after 14 days.

**Conclusion:** Rhodotorula mucilaginosa has high ability to degrade Impranil DLN polymer as a member of polyurethane's family. Esterase is the most probable enzyme involve in degradation of Impranil DLN by R.mucilaginosa.

**Keywords:** Biodegradation, Impranil DLN, Plastics, Rhodotorula mucilaginosa

# P280 - 366: ISOLATION OF MINERAL SOLUBILIZING BACTERIA FROM RHIZOSPHERE OF SOME PLANTS IN KERMAN

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**Background and Aim:** Providing phosphorus as a nutrient for healthy plant growth can be achieved by using phosphate fertilizers. The important role of bacterial phosphate solubilizers (PSB) has been proved recently. In this study, PSB with salt tolerance was isolated from different soils and their beneficial traits were evaluated.

**Methods:** Soil samples collection were performed from two fields in Kerman, Iran. Soils were added in Thompson's broth and incubated for seven days at 30oC. Subculturing with serial dilution method was performed on Luria agar for obtaining single cell colonies. Phosphate solubilizing bacteria were screened on the basis of their phosphate solubilization on sperber agar medium and strains with high ability were then tested against wide range of salt stresses.

**Results:** After isolation of 20 rhizobacteria, phosphate and zinc solubilization tests were performed. Most rhizobacteria could grow on the plates containing phosphate but half of them could solubilize the phosphate by observation of halo around each colony. Accordingly solubilization efficiencies (SE) were calculated. Among the PSB, only 3 isolates could solubilize zinc oxide, too.

**Conclusion:** Regarding to the above mentioned results, selected PSB isolated from agricultural fields were able to colonize in the saline lands with maximizing agricultural benefits. Some additional In vivo tests are ongoing now for final confirmations.

**Keywords:** Zinc solubilizing bacteria, Phosphate solubilizing bacteria, rhizobacteria

# P281 - 437: NEWLY ISOLATED THERMOTOLERANT ALKALIPHILIC BACILLUS SP. DEM07 FROM HOT SPRING IN DEHLORAN, IRAN.

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**Background and Aim:** Thermophilic bacteria are less studied but they are important group of microorganisms due to their ability to produce industrial enzymes.

**Methods:** In this study, thermotolerant alkaliphilic bacteria were isolated from hot spring of Dehloran, Iran. A new isolate DEM07 that could tolerate high temperatures and pH was characterized by morphology, biochemistry and sequencing of its 16S rRNA gene. The isolate was screened for protease activity. Phylogenetic affiliations of the isolate was studied.

**Results:** A new isolate DEM07 with the ability to tolerate high temperatures and pH was identified as Bacillus sp. both by morphology, biochemistry and sequencing of its 16S rRNA gene. BLAST search analysis of the sequence showed maximum identity with Bacillus licheniformis. Strain exhibited considerable protease activity. Phylogenetic analysis of the isolate revealed close affiliation with thermophilic Bacillus species.

**Conclusion:** The study confirmed that the isolated Bacillus sp. to be a true thermo and alkalophile and could be a source of thermo-alkaline protease which can be exploited for industrial applications.

**Keywords:** Thermophilic Bacillus, Protease, Phylogenetic analysis, 16S rRNA sequencing

# P282 - 448: STATISTICAL EVALUATION OF SOME EFFECTIVE VARIABLES ON BIOMASS PRODUCTION OF CHLORELLA SP. WT1 ISOLATED FROM PERSIAN GULF OF IRAN

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**Background and Aim:** Microalgal biomass is now considered as promising feedstock for biofuels and chemicals because of the rapid growth rate of microalgae and their photosynthetic efficiency. Media and culture conditions were shown to be important on the growth and biomass of microalgae. A statistical method such as Plackett-Burman design provides an effective way of sorting out several variables and identifies the most important ones. The main objective of this research was to evaluate the effective variables on the biomass production of this green microalga.

**Methods:** The microalga was grown on modified RM medium with initial density of 107cells mL-1, under 16 h light / 8 h dark regime, at 25 °C on an orbital shaker, 120 rpm for 26 days. Light intensity of 3000 lux was supplied with cold fluorescent tubes. Based on Plackett-Burman design ten factors were used to evaluate their relative importance on biomass production. After completion of growth, the cells were centrifuged at 5000 rpm for 10 min at 4 °C, washed with distilled water and lyophilized to determine dried biomass.

**Results:** The Plackett-Burman design was used to screen the most important variables such as NaNO3, phosphate source (KH2PO4 / K2HPO4 ), MgSO4.7H2O, NaHCO3, Fe source (FeCl3.6H2O or FeSO4.7 H2O), CaCl2.2H2O, MnSO4.H2O, salinity and initial pH. Among all, Phosphate Source (KH2PO4 & K2HPO4 ), MgSO4.7H2O and initial pH showed significant effects on response.

**Conclusion:** It is known that biomass production of microalgae vary under different medium composition and cultivation conditions. With regard to the results, we can plan for optimizing this strain on large scale in proper conditions.

**Keywords:** Statistical evaluation, green microalga, biomass, Persian Gulf

# P283 - 450: CHARACTERIZATION OF AN EXTRACELLULAR SERINE PROTEASE SECRETED FROM THERMOTOLERANT ALKALIPHILIC BACILLUS SP. DEM07

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**Background and Aim:** Bacterial proteases are now among the largest class of industrial enzymes accounting for 60% of total worldwide enzyme sales.

**Methods:** The enzyme was purified through successive applications of ammonium sulfate precipitation, ion exchange chromatography, resulting in a single band with apparent molecular weight of 27.5 kDa, as judged by SDS-PAGE.

**Results:** In this study, Protease with the ability to be active at ¬¬¬high temperatures and pH was purified. Km and Vmax of this protease were 0.06 mg/ml ; 1.25 ?mol/min respectively. The pure protease activity was strongly inhibited by PMSF suggesting that the enzyme is a srine protease. The enzyme retained more than 95% of its initial activity after 1 h pre-incubation with SDS; Triton X-100; H2O2; EDTA at 50 temperature.

**Conclusion:** The purified enzyme was stable in several organic solvent overall; The unique properties of Bacillus sp.DEM07 protease suggested that this thermo and alkaline and detergent stable protease has great potential for industrial applications.

**Keywords:** Extracellular protease, Industrial applications, alkaline protease

# P284 - 476: EVALUATION THE PERFORMANCE OF BIOFILTER IN HYDROGEN SULPHID AND AMMONIA GASSES ELIMINATION ON LABORATORY SCALE AS A PRACTICAL MODEL IN INDUSTRIAL CATTLE

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**Background and Aim:** Compound such as Ammonia and Hydrogen Sulfide are pollutant gases. Ammonia is colorless, but irritant and smelly, while H2S is corrosive, extremely toxic, and also smelly. Large amounts of NH3 and H2S are generated and released from industrial processes, such as petro-chemical refining, metallurgy, food preparation, livestock farming, leather manufacturing, waste-water treatment and treatment of fuels. These days using biofilters has been taken into consideration by expert because of its advantages such as low cost, low energy consumption, no chemical usage and no production of contaminated by products.

**Methods:** This research was done in 2013 at Environmental lab of Iranian Ghaza Azmaa. Biofilter cylinders are30 cm each and made of glass. Each cylinder is filled with Peat soil , Oak, Leaves soil, Activated sludge of soft drink industry, Straw, Organic fertilizer and Shell in different arranges. After matching beds with mentioned gases, in the final stage Ammonia and Hydrogen Sulfide gases were passed separately through the cylinder with inflow and outflow. Elimination percentage of Ammonia and Hydrogen Sulfide gases which were evaluated by Spectrophotometry methods and degrading bacteria of these gases were studied by Biochemical methods.

**Results:** Among the four cylinders, the ones that were filled with Peat soil, Leaves soil and straw recorded 100% elimination in comparison with others, and also Pseudomonas and gram-positive Bacillus were dominant bacteria of these cylinders.

**Conclusion:** According to the results, designed filters of present study can be used as a useful model for future researches which want to investigate the elimination of Ammonia and Hydrogen Sulfide gases of industry.

**Keywords:** Biofilter, Hydrogen Sulfide, Ammonia

# P285 - 498: CELLULASE PRODUCTION BY INDIGENOUS CELLULOLYTIC RHODOCOCCUS AND ENTEROBACTER SPECIES

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**Background and Aim:** Cellulase enzyme produced by some microorganisms and has many uses in the industry. The aim of this study was to isolate the indigenous cellulolytic microorganisms.

**Methods:** For this purpose, the soil of the agricultural area (Ashkezar-Yazd) was used. Soil samples were inoculated into cellulose broth culture medium and incubated at 30 ° C for 1 week at 150 rpm. To isolate and purify the cellulolytic microorganisms, this culture medium was cultured on nutrient agar (NA) and potato dextrose agar (PDA), until pure bacterial and fungal colonies were obtained. Biochemical tests were performed to identify isolates. Each of the purified isolates was inoculated into the salt culture medium containing cellulose strips as the only carbon source. The culture medium was incubated for 1 month and the cellulose strips were analyzed each week. Titration tests were done to determine the amount of produced enzyme.

**Results:** The results showed that among the 8 cellulolytic isolates, 2 bacterial isolates had a fair cellulolytic activity. The results of biochemical tests showed that these two isolates belonged to Rhodococcus and Enterobacter species. They were able to break down cellulosic strips by 15% and 20% respectively. The enzyme production by these two isolates was 4 g / L and 4.5 g / L, respectively.

**Conclusion:** These two native isolates have a good ability to produce cellulase enzyme. By identifying them accurately, while recognizing the native flora of the region, the ability of these isolates can be used in the research works as well as in the industries.

**Keywords:** Cellulase, Rhodococcus, Enterobacter, indigenous microorganisms, Ashkezar

# P286 - 510: THE USAGE (APPLICATION) AND ROLE OF ARCHEABACTERIA IN FIXATION (STABLIZING) OF SAND DUNES

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**Background and Aim:** Arctic bacteria are separated from the early stages of evolution. Examined arcs are located in the Kern Arkwita branch of the warm-blooded bacteria; these arcs are organisms that grow best at temperatures between 50 ° C and 70 ° C. The warmth of friends is proliferated by sexual or non-sexual reproduction, sexual reproduction is required for male and female, but non-sexual reproduction is accomplished by bipolar division (mitosis).

**Methods:** The collection of information from the sites of books and new scientific articles is an overview.

**Results:** The role of arctic bacteria in the stabilization of sandy soils is very valuable, and the method referred to as another, such as microscopic cementation, is used to modify soil mechanical properties such as resistance, hardness and permeability.

**Conclusion:** Comparing this method with other methods of desalinating, such as mulching, it should also be noted that mulching is not a solution for a number of reasons: firstly, harvesting areas have vast amounts of land, which makes it virtually impossible to squeeze mulch, since oil mills are priced at a high price. And, secondly, mulch contributes to a large environmental pollution.

**Keywords:** archeabacteria, wind erosin control, biological cement

# P287 - 570: DETECTION OF ANTIBIOTIC RESISTANT GENES OF TETW, CTX-M-32, AND AAC3 -1 IN MUNICIPAL WASTEWATER

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**Background and Aim:** Antibiotic-resistant bacteria (ARGs) are not limited to clinical environments. Moreover, ARGs can enter the environment and disseminate. Therefore, this study was aimed to identify the genes encoding resistance to the antibiotics of Gentamicin, Ceftazidime, and Tetracycline.

**Methods:** Samples were taken from eight different locations of the municipal wastewater treatment plant and one site in the downstream of the river receiving its effluent. Monthly sampling was used for four consecutive months. The extraction of genomic DNA was performed using the kit. The utilized PCR program for identifying encoding genes concluded steps of initial denaturation (94 ˚c, 10 min), denaturation (94 ˚c, 45s), annealing temperature (varying), extension (72 ˚c, 30s) and the final extension (72 ˚c, 10 min). PCR cycling Steps (from denaturation to extension) were repeated for 30 cycles. PCR products were analyzed using an electrophoresis.

**Results:** The total frequency of the studied genes was 37.5%. Genes of tetW, ctx-m-32 and aac3 -1 were detected in 68% (22 samples), 28% (9 samples) and 15.6% (5 samples) of total specimens, respectively. The highest and lowest amount of genes were detected respectively in effluents of the second lagoon and the secondary sedimentation tank. The results showed that the frequency of genes in the wastewater does not follow the same pattern in different units of the sewage treatment process.

**Conclusion:** Municipal wastewater has a high prevalence of antibiotic-resistant genes. Therefore, the present study showed that sewage treatment plants do not have the ability to remove these factors which have human and environmental hazards.

**Keywords:** Antibiotic resistance genes (ARGs), tetW, ctx-m-32, aac3 -1 Uidiwrcepn Mvepveier evienva eUv

# P288 - 579: ISOLATION AND IDENTIFICATION OF FUNGI PRODUCING CELLULASE ENZYME FROM SUGARCANE BAGASSE COMPOST

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**Background and Aim:** Composting is an economical and convenient way to convert organic waste containing high amount of carbon into nutrient-rich materials. Many organic waste such as sugarcane bagasse is annually produced which can be converted into compost. Microorganisms, including fungi, play an important role in the decomposition of the remains. Most of the plant residues are lignocellulose compounds.

**Methods:** For this purpose, 5 g of each of the sheep manure, leaf manure, cow manure and mushroom compost were added to 50 g of initial bagasse each.The moisture content of the samples was kept at about 60% of the weight of the bagasse and the samples maintained for 60 days at ambient temperature.The samples were upside down for aeration in 7-5 days for the first two weeks and then once a week. For isolation of fungi, a general culture medium containing Rose Bengal was used. Fungal isolates were purified using single sporulation. A solid culture medium containing carboxymethyl cellulose was used to study the cellulase-producing fungi.

**Results:** Fungal genuses were identified on the basis of apparent features and microscopic examination under the genus of Fusarium, Aspergillus, Pseudosporium and Arthrinium. Fungal strains were identified based on apparent features and microscopic examination. Based on qualitative cellular analysis, the three isolates from samples containing of sheep manure (Fusarium and Arthrium) and leaf manure) Aspergillus) had the highest production of halo (10mm) and one isolate from the fungus compost. sedosporium with a 2 mm holo had minimum cellulase activity.

**Conclusion: -**

**Keywords:** Compost, Cellulasem, Enzyme, Fungus

# P289 - 580: EVALUATION OF YEASTS WITH CAPABLE OF BIODEGRATION OF GREEN KHAMSI AND ACTIVE ORANG COLORS.

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**Background and Aim:** The most common artificial colors used in the industry and the largest group of synthetic dyes are azo dyes. This colors are designed to be resistand to light and chemicals that are not easily decomposed. Many of these compounds are toxic, mutagenic and carcinogenic. When the colors release in to the environment, causing serious environmental hazards. The aim of this study was to evaluation of yeasts with capable of biodegration of azo dyes.

**Methods:** In this study was used a few sample of dying workshop. The samples were cultured on nutrient agar (N.A) medium containing colors used. The number of yeasts colones were isolate and identify. 100 micro litr of yeasts stoke was added in nutrient broth (N.B) medium. The samples were incubated at 30 degrees celsius for 6-7 day. Then samples centrifuged for 15 minute at around 2800. In the end OD of samples were measured by specterophotometr device.

**Results:** Identification of yeasts were performed by gram stain and biochemical tests. The yeasts were Cryptococcus. uniguttulotus and Cryptococcus. terreus. The percent of decolorization was 84/2% for green and 12/7% for orang by C. terreus. Also this percent of decolorization was 84/2% for green and 15/3% for orang by C. uniguttulotus.

**Conclusion:** The yeasts showed the effective decolorization on the green and orang colors. Yeasts usually prefer acid condition for fermentation. There for the yeasts can be used for decolorization of acid dyes.

**Keywords:** Yeasts, Decolorization, Green khamsi, Active Orang, Cryptococcus

# P290 - 585: EVALUATION OF BACILLUS WITH CAPABLE OF BIODEGRATION OF METHYL RED AND RUBIN DYPRSY COLORS

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**Background and Aim:** The colored wastewater, are considered one of the important wastewater of textile indusy. The main pollutants of the textile wastewater are dyes. The entrance of these dyes to the environment, causes to increase of environmental hazards. The aim of this study is isolation and identification of bacteria (bacillus) with ability of biodegration of Methyl Red and Rubin Dyprsy colors.

**Methods:** In this study was used a few sample of dying workshop. The samples were cultured on nutrient agar medium (N.A) containing of dyes (Methyl Red and Rubin Dyprsy). The number of bacteria colones, were isolate and identify. Then 100 micro litr of bacteria stokes was added in nutrient broth (N.B) medium. The samples were incubated at 30 degrees centigrade for 6-7 days and the necessary checks were carried out.

**Results:** Identification of bacteria were performed by gram stain and biochemical tests. The bacteria were Bacillus. liecheniformis. The ability to decolorization was abserved in the nutrient agar medium by bacteria. But there was no significant decolorization by bacteria in the nutrient broth medium.

**Conclusion:** Decolorization of dye, by bacteria on agar medium and lack of decolorization in broth medium, shows there is direct relationship of decolorization whit the growth, color structure and compatibility and function of enzymes bacteria in different environmental condition.

**Keywords:** Bacteria, Bacillus, Decolorization, Mthyl Red, Robin Dyprsy, Wastewater

# P291 - 613: PRODUCTION AND OPTIMIZATION OF SINGLE CELL OIL IN CYANOBACTERIA

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**Background and Aim:** Increasing threat to the environment from exhaust emissions and global warming have generated intense international interest in developing alternative nonpetroleum fuels for engines. Biofuel is one of the options to fulfil the need as transport fuel. It received attention as environmental friendly renewable substitutes fuel.Biodiesel, a mono alkyl ester of long chain fatty acids derived from renewable lipid such as vegetable oils, animal fats and microbial oils.The microorganism such as bacteria, yeasts, molds, algae and cyanobacteria can accumulate lipids at more than 20% of their biomass are defined as oleaginous species.

**Methods:** Different paddy field samples screened for isolation of cyanobacteria strains. in this research the ability to produce lipids from dry biomass on different sources of nitrogen, duration of incubation, aeration rate, pH and temperature using the single factor was evaluated on the rate of biomass production. After this stage, Taguchi method was used to optimize factors such as the nitrogen source, temperature, pH and incubation period.

**Results:** After optimizing the conditions, 6.5g / l biomass was produced in bacteria. The most effective factor in the optimization of examined bacteria was nitrogen source.

**Conclusion:** According to the results obtained from Taguchi design, the rate of production of dry biomass and lipid produced in the examined bacteria after the optimization was the culture conditions. Therefore, by using Taguchi design, we can achieve optimization process which is an essential step in all experiments to increase the productivity and reduce costs.

**Keywords:** Biodiesel, Cyanobacteria, Microbial oils, Taguchi

# P292 - 619: INVESTIGATION THE EFFECT OF VARIOUS SELENATE CONCENTRATIONS ON THE GROWTH OF SPIRULINA PLATENSIS

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**Background and Aim:** Spirulina platensis can be used as a source of essentials supplements. Selenium (Se) is a natural trace element which at nanomolar concentrations can be beneficial for growth of some microalgae but at micromolar concentrations may result in adverse effects (e.g. decreased growth rate). For nutritional purposes, Se is often supplied in the form of inorganic salts (selenite, selenate), but organically bound selenium in microalgae biomass is more beneficial and less toxic and can be used as food supplement.

**Methods:** The aim of this work is to evaluate the tolerance of S. platensis to selenate. For this, three different sets of flasks (containing 8 concentrations of selenate) along with one control were prepared. Inoculation was performed using mid-log phase cells. Incubation was done for 30days, 12/12h photoperiod at 28ºC. At the predefined intervals, the growth was estimated using the measurement of optical density at 550nm and dry weight determination.

**Results:** It was observed that adverse effects of selenate on growth was began from 100ppm. Moreover, it was observed that although in some times the dry weight of algal cells become high in cases of 100-2000ppm, but it was not observed production of chlorophyll in each case (as an important pigments).

**Conclusion:** Microalgae can physiologically adapt to high Se concentrations by accumulating high amounts of intracellular Se in the form Se-amino acids. The biomass of Se-enriched microalgae can potentially be used in human and animal nutrition.

**Keywords:** Spirulina, selenate, tolerance, supplement

# P293 - 631: COMPARISON BETWEEN ZARROUK MEDIUM AND MODIFIED ZARROUK MEDIUM FOR YIELD THE BEST BIOMASS

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**Background and Aim:** With respect to being an easy to grow species and having a simple harvest process, Spirulina has attained the position of the most popular algae in microalgal biotechnology. It is important in bioremediation and has gained its economic importance for its nutritional values. Zarrouk medium is quite expensive and has a complicated composition, which significantly influences the price of the cyanobacteria biomass preparation that cultivated on it. It is not feasible for the commercial production due to its high production cost. Hence many investigators tried to cultivate the Spirulina on cheap resources.

**Methods:** In order to obtain an alternative cheap medium, in the present study 3 different treatments were prepared: standard Zarrouk medium, medium without NaNO3, medium without NaHCO3. Growth curve was drawn by measurement the OD550. The amount of biomass production and comparison between standard medium and modified culture media was also studied using calculation of dry weight in 70ºC for 24 hours.

**Results:** The gathered data showed that the most biomass production of S. platensis was received with this priority: standard Zarrouk medium> Zarrouk medium without NaNO3> Zarrouk medium without NaHCO3.

**Conclusion:** Spirulina is rich in antioxidant enzymes, and has therapeutic potential. With regarding this fact that microalgae are valuable sources of essentials supplements such as vitamins, carbohydrates and etc. found new formulations of culture media to reduce production costs, have become to an emerging fields for substitute older culture media.

**Keywords:** Spirulina, culture media, microalgae

# P294 - 657: THE EFFECT OF C:N RATIO AND DIFFERENT NITROGEN SOURCES ON LACTIC ACID PRODUCTION BY LACTOBACILLUS DELBRUECKII

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**Background and Aim:** Lactic acid and its derivatives have been widely used in industrial applications. Manufacturing of lactic acid can be done using various methods; fermentation technique has been paid more attention, according to the advantages in terms of stereo isomer selection, low substrate costs, mild conditions, low energy consumption, and environmental friendliness. The aim of this study was to investigate the effect of C: N ratio and different nitrogen sources on the lactic acid production by Lactobacillus delbrueckii.

**Methods:** Lactobacillus delbrueckii PTCC 1333 was obtained from the Iranian Research Organization for Science and Technology (IROST). In this work, design of experiments (DOE) methodology using full factorial design was applied to evaluate the influence of C:N ratios (10, 20 and 30) and effects of 6 different nitrogen Sources containing ammonium sulfate, urea, yeast extract, peptone, tyrosine and histidine on lactic acid production. Lactic acid contents in fermentation broth were analyzed by high pressure liquid chromatography (HPLC) system.

**Results:** The highest Lactic acid production (80.04 g/L) was achieved at C:N ratio of 10:1, when, Histidin was used as a nitrogen source.

**Conclusion:** In the present study, the effect of C:N ratio and different nitrogen sources on lactic acid production by lactobacillus delbrueckii was studied. The results showed that C: N ratio is another important factor that affects lactic acid production that needs to be optimized in the main component of the medium.

**Keywords:** Lactic acid, Nitrogen source, Design of experiment, C:N ratio

# P295 - 662: BIOTECHNOLOGICAL APPLICATIONS OF EXTRACELLULARPOLYMERIC SUBSTANCES OF CO B YN C AI RET C ABYN YC

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**Background and Aim:** Many cyanobacterial especially Nostoc strains produce extracellular polymeric substances (EPS), ani Uczed Qaw Qe Mdda niice Mean ven Uie ani Uen MMQ dice v Qe ie cen Mdce i UQ evaee ee aeed ce Qie h surrounding environment (released polysaccharides (RPS)).

**Methods:** Some of these possess unique properties for special applications in bioremediation, food, and MaQpe i v ee e wan ian de vid nce i Uc M i ie M. ae ie wa z Mid en Uce d ae ai d nce d an in dve i Md M tn ii nhic i z e n Uce they are not vulnerable to variations in climatic, cultivation, production or pollution conditions n Uce ie e Mdie ve ce i Uea n Mae d i Q Uae Uv.e

**Results:** For these reasons, they are good candidates for mass production on an industrial scale and vae ie Qie e MaQpe ia ense biotechnological potential.

**Conclusion:** The data gathered here provide a manifest insight on the introducing of Nostoc species as a wi Qc i ie MQ d ee Qe P vin d ecc c ni e EQz ae i ide h Mn Ud e M ead to the development of the hi Qv e da UQc Qx e i Uc M z.

**Keywords:** Extracellular Polymeric Substances (EPS), Cyanobacterium, Nostoc

# P296 - 679: SCREENING OF CHITINASE FROM HALOPHILIC AND HALOTOLERANT BACTERIA

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**Background and Aim:** Chitinase (EC3.2,1.14) is a glycosyl hydrolytic enzyme that degrades chitin - most abundant polymer after cellulose in nature- which exists in wide range of organisms such as; bacteria, fungi, animals and plants. According to the recent data, it has many benefits in various applications; agriculture, pharmacy, tissue engineering, single cell protein production, food industry, control insects, etc.

**Methods:** In this research we collected water samples from Urmia lake, Iran. About 300 bacteria were isolated from different regions of the salt lake. For screening of chitinase from bacteria, colloidal chitin1%(w/v) was incorporated with marine agar media that contained (gL-1): MgCl2, MgSO4, CaCl2, KCl, NaCl, pepton, yeast and agar. The culture was incubated for 7 days at 37◦C. Observation of clearance zone was considered as a detector for chitinase. In the next step we used molecular methods (PCR and sequencing) for identification of bacteria with chitinolytic activity.

**Results:** Screening showed three strains had good ability to degradation chitin: WE16, WT4, WT1. The sequencing analysis data confirmed they are belonging to Providencia vermicola, Bacillus vallismortis and Bacillus clausii, respectively. WT1 and WT4 were detected as Gram-positive and WE16 had Gram-negative features. Although, all of the three samples showed positive catalase activity.

**Conclusion:** Considering to industrial applications of chitinase and specific properties of halophilic bacteria and their enzymes such as polyextremophility, they can be as an economical and beneficial of the next generation of enzymes in biotechnology.

**Keywords:** Bacteria, halophiles, chitinase, enzyme

# P297 - 699: SEROLOGICAL DETECTION OF HUMAN GROUP A ROTAVIRUSES IN URBAN AND HOSPITAL SEWAGE SYSTEMS AND RIVER WATER SAMPLES IN ALBORZ PROVINCE

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**Background and Aim:** Human group A rotaviruses are the most important cause of acute gastroenteritis in infants and young children worldwide. Waterborne transmission of rotaviruses and presence of rotaviruses in water sources are of major public health importance. The aim of this study was serological detection of human group A rotaviruses in urban and hospital sewage systems and river water samples in Alborz province.

**Methods:** This cross-sectional study was carried out on 76 samples collected from both influent and effluent water of 4 sewage treatment systems, hospital sewage, Karaj and Baraghan rivers in Alborz province. All samples were concentrated using pellet method. Then human group a rotaviruses were identified with direct ELISA method.

**Results:** In total, rotaviruses were identified in 6 samples (7.89%). A significant relationship was found between rotavirus detection and sampling site (P=0.039). The frequency of rotavirus detection in summer, autumn and winter was 16.66%, 50% and 33.33%, respectively.

**Conclusion:** This study showed the contamination of environmental water samples by human group a rotaviruses. Therefore, it is necessary to constantly monitor sewage treatment systems and to find new methods of sewage treatment, with emphasis on viruses such as rotavirus. To stop rivers from being polluted removing the sewage drainpipes from around rivers is necessary.

**Keywords:** Human group a rotaviruses, acute gastroenteritis, urban sewage, Pellet method, Direct ELISA

# P298 - 765: EXAMINING THE PHENOL OXIDASE ACTIVITY OF WHITE-ROT FUNGI ISOLATED FROM IRANIAN NORTHERN FORESTS

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**Background and Aim:** White-rot fungi are one of the wood-rotting fungi that have different enzymes. Some of these enol oxidase activity have an important role in biodegradation of different contaminations

**Methods:** Phenol oxidase activity of white-rot fungi is examined quantitatively and qualitatively. 38 isolates are selected from qualitatively tests. Gallic acid as a phenolic compound is used for this examination. The brown halos on the surface of plates confirms degradation of phenolic compound using phenol oxidase enzymes.

**Results:** Intensity of changing color in the presence of white-rot fungi is calculated by a 1-4 numeric range. 6 isolates have the most activity and 6 isolates have the least one. 14 of isolates have relatively high and 14 of isolates have relatively low activity

**Conclusion:** This study introduces the isolates with higher activity that are applicable for biodegradation of different contamination such as Carbon Nanotubes(CNTs).

**Keywords:** White-rot Fungi, Phenol Oxidase, Gallic acid

# P299 - 770: INVESTIGATION ON PRODUCTION AND PURIFICATION OF POLYHYDROXYBUTYRATE FROM INDIGENOUS BACTERIAL SPECIES OF RASHT ZARJOUB RIVER

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**Background and Aim:** Due to excessive use of plastic polymers resistant to biodegradation in food packaging products and the use of plastic bags for packaging, transport and waste accumulation of plastic waste in nature has become a major problem. One way to solve this problem is to use biodegradable polymers.

**Methods:** Polyhydroxyalkanoate (PHA) producing bacteria were isolated from an environmental sample. A strain of bacterium was identified using biochemical and 16 rRNA sequencing .Polyhydroxyalkanoates produced by these bacteria were measured under different culture conditions.

**Results:** In this study, the native bacteria producing polyhydroxyalkanoates were identified as Klebsiella SP. The optimal conditions for producing the polymer were determined to be temperature 37 °C and pH 5-7, respectively. Under these conditions the highest produced polymer was obtained.

**Conclusion:** This is the first report of PHA production by a native strain of Klebsiella SP isolated from Zarjoub river. The optimal amiunts of nutrients, temperature, pH and aeration for the production of PHAs were evaluated.

**Keywords:** Polyhydroxyalkanoate, Klebsiella, Zarjoub river

# P300 - 772: ISOLATION AND IDENTIFICATION OF HALOPHILIC MICROORGANISMS PRODUCING LIPASE ENZYME

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**Background and Aim:** Isolation and characterization of salt stable lipases from halophilic sources has seen a growing interest in recent years. Availability of such enzymes would facilitate industrial processes that require activity at high salt concentrations as well as low water activity. Saline environments such as saline lakes or saline soils are excellent sources for isolation of halophilic microorganisms.

**Methods:** Samples were consist of saline water and salt crystals from Aran-Bidgol Lake, Urmia Lake and also saline water from Marun River contaminated with oil. Isolation of halophilic bacteria and archaea carried out by using HM 10%, MGM 23% and NOM 26 %. All isolates were screened for lipase activity on plates containing (% w/v) Rhodamine B 0.001, nutrient broth 0.8, total salt 10-23, agar 1.5, and olive oil 3, in distilled water, pH 7.5. Bacterial and archaeal plates were incubated at 33°C for 48 h and 40°C for 3 weeks, respectively. Lipase production was identified by an orange halo around colonies, visible under UV light at 350 nm. KOH test and gram staining had been done for the isolates had been isolated on HM culture.

**Results:** From 81 isolates only 38 isolates produced lipase. Base on colony morphology and gram staining, 9 isolates were identified with 16S rRNA gene sequencing.

**Conclusion:** Hypersaline environments are source of bacteria and archaea species producing hydrolytic enzymes such as lipase.

**Keywords:** lipase, halophilic microorganisms

# P301 - 775: CANDIDA SPECIES ISOLATION FROM WATER SEDIMENTS AND STUDDING THEIR ENZYMATIC PROPERTIES

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**Background and Aim:** Analysis of the diversity and microbial poplation of native ecosystems and their special abilities,is very useful in order to protect biological resources and screening of new isolates. Rivers and Caspian sea sediments due to the congruous conditions provide numerous habitats for a large community of microbial members who are actively engaged in the production of catabolic enzymes.This research focuses on Candida species living in these habitats.

**Methods:** A Set of three isolates were collected from fourteen stations during three periods of sampling and after preparation of three serial dilutions they were culture on YGC agar.

**Results:** Among the three enzyme generating isolates all could produce lipase,DNase and amylase.Two strains could produce protease and lisetinase enzyme. None of the isolates have the ability to produce chitinase and pectinase. Two isolates, SHOO2 and SHOO7, had most diverse enzyme production.

**Conclusion:** Biochemical and morphological analyses were accurately performed for all three isolates and then genetic identification was used for the two isolates, SHO14 and SHOO2, which were similar to the species Candida tropicalis and Candida fameta respectively.

**Keywords:** Yeast, water sediments, enzymatic properties

# P302 - 809: OPTIMIZATION OF OZONATION TIME PERIOD TO KILL PROBIOTIC AND PATHOGEN BACTERIA

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**Background and Aim:** Ozone is an active form of oxygen molecule which can be used to kill different kinds of microorganisms like bacteria. It is a powerful oxidizing reagent that reacts with unsaturated membrane lipids and breaks the aromatic ring of amino acids. The most sensitive amino acids are tyrosine, phenylalanine and tryptophan.

**Methods:** Eight different types of bacteria, gram positive or gram negative, were ozonized by Opak ozone generator and each two minutes, a 10 microliter sample was taken and spread in a nutrient agar, MRS agar and modified Carr medium plates. Lactobacillus acidophilus, bifidobacterium lactis, Acetobacter cerevisiae, Streptococcus mutans, Coagulase-Negative Staphylococci, Escherichia coli, Pseudomonas aeruginosa and Salmonella typhi resistance against ozonation was investigated to figure out the exact time that is necessary to kill all bacteria in 10ml solution of 0.5 McFarland concentration.

**Results:** Among tested bacteria, Escherichia coli was the most resistant. 12miutes of ozonation was required to kill all bacteria in the solution. The least resistant bacteria was Streptococcus mutans which only 4 minutes of ozonation was enough to kill all the bacteria.

**Conclusion:** Ozone is a good reagent with no toxic residue that can be used in contaminated places to remove pollution efficiently.

**Keywords:** Ozone, killed bacteria, probiotics, pathogens

# P303 - 813: SCREENING AND IDENTIFICATION OF KERATINOLYTIC BACTERIA FROM POULTRY FEATHER DUMPING SOIL

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**Background and Aim:** Annually, feathers are produced in large quantities by poultries. At present these are disposed by land filling or burning which causes environmental pollution. Therefore, the aim of this study was to isolate and identify high potential keratinolytic bacteria from poultry feather dumping sites.

**Methods:** The soil samples were collected from three poultry areas in vicinity of Gorgan, Golestan, Iran. The samples were diluted to 10-7 times in distilled water and 0.1ml of this dilution was spread on nutrient agar plate and incubated for 24h at 37oC. The obtained colonies were inoculated onto skim milk agar plate and incubated as before. The strains that produced clearing zones were inoculated in feather meal broth and incubated at 37ºC for 7 days. Thereafter, degradation of feather was evaluated and absorbance of the medium was measured at 450 nm. The isolates with significant feather-degrading capability were identified based on morphology and biochemical tests. Next, the effect of pH and temperature were examined on keratinolytic activity of the isolates.

**Results:** Out of 29 colonies, 17 colonies showed clearing zones on skim milk agar plate. Among them the 7 isolates exhibited high potential for feather degradation. They were Paenibacillus massiliensis, Bacillus validus, Paenibacillus timonensis, Bacillus megaterium, Bacillus licheniformis, Bacillus pantothenicus and Bacillus ilunoisensis. Most of them showed maximum feather degradation at pH 6.78 and temperature 37C.

**Conclusion:** Therefore, these isolates could be potential candidates for degradation of feathers to carry out friendly environment disposal of poultry waste and also to produce protein supplement for domestic animals.

**Keywords:** Screening, poultry feather, keratinolytic bacteria, soil

# P304 - 825: BIOTRANSFORMATION OF DIBENZOTHIOPHENE TO 2-HYDROXYBIPHENYL BY IMMOBILIZED BACTERIA

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**Background and Aim:** Expanded perlite was used as a support for the immobilization of a potent dibenzothiophene desulfurizing bacterium, Rhodococcus erythropolis SHT87, which without reducing the energy value of the oil, converts dibenzothiophene (DBT) to 2-Hydroxybiphenyl (2-HBP).

**Methods:** SHT87 was grown in a culture medium containing DBT as the sulfur source. At the end of the logarithmic phase of the bacterial growth, the active cells were deposited. Then the cell suspension containing 3 grams of dry cell weight, mixed with 10 grams of perlite, and was placed in a shaker incubator for 12 hours at 30 ° C. The immobilized cells were added to a two-phase system with 0.5 mM DBT in n-Tetradecane and concentrations of DBT and 2-HBP were examined repeatedly for 12 hours by HPLC.

**Results:** In the immobilization process, the final weight ratio of bacteria to perlite grains was 1:9. These bacteria reduced the concentration of DBT in the reaction medium to zero after 8 hours, and the maximum specific desulfurization activity of them was 0.45 micromol 2-HBP min-1 gDCW-1.

**Conclusion:** The maximum specific desulfurization activity of the free resting cells of SHT87 has been reported 0.47 micromol 2-HBP min-1 gDCW-1 and the maximum rate of desulfurization by immobilized cells was not significantly different from that of unbound cells. On the other hand, the process of removal of DBT has generally been accelerated, which is probably due to the higher absorption of DBT on the surface of the immobilized bacteria which confirms the usefulness of immobilized SHT87 for DBT desulfurization.

**Keywords:** Immobilization, Biodesulfurization, Rhodococcus erythropolis SHT87

# P305 - 826: INVESTIGATING THE ABILITY OF SOIL MICROORGANISMS IN THE BIODEGRADATION OF RESISTANT OIL COMPOUNDS

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**Background and Aim:** The major part of the harmful effects of oil in contaminated environments is due to sulfur heterocyclic compounds, with increasing evidence of toxicity and carcinogenicity. Microbial biodegradation is a suitable way to clean up them. The purpose of this study was to investigate the possibility of the degradation of a relatively stable sulfur compound, dibenzothiophene (DBT), by means of a set of microorganisms that, over the years, have grown in the presence of gasoline.

**Methods:** To isolate microorganisms capable of using DBT as the source of sulfur, a growth medium containing glycerol and ammonium chloride as carbon and nitrogen sources and 0.25 mM DBT as a source of sulfur was used. While increasing the biomass, the change in the concentration of DBT was analyzed with frequent analysis of the growth environment by HPLC.

**Results:** Among the microbial consortia isolated from contaminated soils, one of them had the highest growth rate at 30 ° C in 14 days relying on DBT as the only source of sulfur. Monitoring of the concentration of DBT in the medium indicated a reduction in the concentration of this compound. In the first three days of the growth, the concentration of DBT reached zero.

**Conclusion:** Studies show the relatively high specific desulfurization activity of this microbial consortium and its ability to use DBT and possibly its derivatives as sources of sulfur.

**Keywords:** Biodegradation, dibenzothiophene, desulfurization, gasoline

# P306 - 852: EVALUATION OF ANTIMICROBIAL ACTIVITY OF BACILLUS SUBTILIS ISOLATED FROM SOILS BEHBAHAN VIA DISC DIFFUSION

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**Background and Aim:** One of the dominant microorganism of soil is Bacillus subtilis which is able to produce a large number of biologic combination some of which have antimicrobial activity due to their in forming spore, Bacillus subtilis is considered as one of the best bacteria in biologic control. The aim of present study was to investigation the antimicrobial activity of strains Bacillus subtilis against B. subtilis, Pseudomonas aeruginosa, Staphylococcus aureus& Escherichia coli.

**Methods:** The soil sample were collected from 102 areas in behbahan.disc diffusion assays were used to examine the antimicrobial activity of the isolated purified Bacillus subtilis.

**Results:** Totally, 30 isolated strains were confirmed as B.subtilis. 18 of them showed antimicrobial activity against at least one of the bacteria Bacillus subtilis, Pseudomonas aeruginosa, Staphylococcus aureus& Escherichia coli.

**Conclusion:** These indigenous strains showed the ability to produce antimicrobial metabolites. Therefore, these strains can be used as good candidates for the biological control the pathogenic bacteria and as an alternative for chemical antibiotic.

**Keywords:** Bacillus subtilis, soil, antimicrobial activity, behbahan

# P307 - 857: REPLACING SOYBEAN MEAL WITH WHEY POWDER IN ERYTHROMYCIN PRODUCTION WITH MICROBIAL FERMENTATION

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**Background and Aim:** In general, the productivity of microbial metabolites closely related to the method of fermentation. The carbon and nitrogen sources dramatically influence antibiotic formation. While there are several reports on the effect of different fermentation-media ingredients on erythromycin production, there is no report on the effect of whey powder on erythromycin production. In this study, effect of substitution whey powder nitrogen source instead of soybean meal in fermentation media, and effect of different concentration of two main nitrogen sources (soybean meal and whey) on erythromycin production were evaluated.

**Methods:** The media ingredients consist of: starch, Dextrin, soybean meal, CaCO3, (NH4)2HPO4, (NH4)2SO4, Rapeseed oil and Whey powder. Standard erythromycin and Saccharopolyspora erythraea PTCC 1685 were used in this investigation. The process of erythromycin production consists of 3 steps: Sporelation, Seeding and Fermentation. During the process, the variations of bacteria morphology, pH and concentration of biomass have been measured since the fourth day on alternate day till end and the amount of produced erythromycin has been measured by spectrophotometry method.

**Results:** According to the results, the highest amount of erythromycin was obtained when we used the mixture of 12g/l(40%) soybean meal-54g/l(60%)whey powder. This option results in erythromycin production was acceptable comparison to industrial media.

**Conclusion:** Whey powder is enhancing the yield of erythromycin production. It is also cheap, available and easy to use, because it is produces inside our country in a large scale and it is more economic and useful than the other sources because it is a by-product.

**Keywords:** Erythromycin production, microbial fermentation, whey powder

# P308 - 862: EVALUATION OF MEDICAL WASTE STERILIZATION IN TEHRAN HOSPITALS.

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**Background and Aim :**Medical wastes are potential hazards for public health and environment. So, sterilization and management of them is an important strategy to prevent hospital and healthcare associated infections. In this study appropriate medical waste sterilization in Tehran hospitals using biological indicators was examined.

**Methods:** 25 hospitals from the Tehran city were selected accidentally and in 10 months from April to December 2014, their medical waste sterilization examined. 14 of them use autoclave and hydroclave and 11 of them use chemical methods of sterilization. Bacillus atrophaeus indicators with 106 bacterial spores for chemical methods (ATCC:9372) and Bacillus stearothermophilus vials with 106 bacterial spores for autoclave and hydroclave (ATCC:7953) were used to evaluate the sterilization. All examinations repeated three times in different months, and finally 75 tests were done. SPSS version 21.0 was used to analysis the data.

**Results:** The results show Bacillus stearothermophilus was 7 %( 3/42) positive and Bacillus atrophaeus was 18% (6/33) positive in samples. Total positive samples was 9 in 75 ( 12%). The positive samples in chemical methods were significantly more than autoclaves and hydroclaves ($p< 0.05$).

**Conclusion:** As the results show probable medical waste sterilization have been done in most (88%in this study) Tehran hospitals, although heat sterilization were showed more effective and most recommended.

**Keywords:** Medical waste, Sterilization, Hospitals

# P309 - 867: EVALUATION OF MICROBIAL QUALITY OF WATER IN IRANIAN CAVES

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**Background and Aim:** Within the past decade there has been an increasing interest in cave microbiota. Also some echotourists who had travel to this caves had some infection after their trip. The present study was undertaken to know the microbial counts in water samples from different caves in Iran.

**Methods:** 15 different samples were obtained from the deepest caves in Iran.the samples has been obtained from Jujar in Kermanshah, Paro in Kermanshah and Some in Golestan. samples from different deeps (minimum till maximum deeps) were examined. Iranian National Standard ISIRI 1011 was used to find the microbial counts. All experiments repeated 3 times.

**Results:** The jujar cave in Kermanshah province has the less pollution in water samples. All water samples had <3 MPN /100 ml total and fecal coliforms. And the Som cave in Golestan province has the most bacterial counts in water samples, in some deeps there were >1100 MPN /100 ml total and fecal coliforms.

**Conclusion:** The results show in some deep caves, there are total and fecal coliforms in water samples which explain some infection in echotourists who used these samples to drink. Also deepest caves have lower count for microorganism.in attention to that this study is the first study about microbial counts in cave water samples, so it needs to more researches to find the source of this pollution in caves. Also many heterotrophs find in water samples which their identification maybe led to find new microbial strains.

**Keywords:** Microbal quality, cave, water, iran

# P310 - 868: SCREENING AND IDENTIFICATION OF NATIVE HALOPHILIC ARCHAEA WITH CHITINOLYTIC ACTIVITY

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**Background and Aim:** Chitin is the second most abundant natural polysaccharide and chitinases are glycoside hydrolases for catalyzing the hydrolytic degradation of chitin. They have a wide range of applications such as preparation of bioactive oligosaccharides, production of single cell proteins, pathogen inhibition and increasing the immune system of plants. Halophilic microorganisms are expected to produce extremozymes which are tolerable in high salt concentration and low water activity. These features are crucial in harsh conditions of industrial enzyme production. The aim of this study was to screen various strains of haloarchaea isolated from different saline and hypersaline lakes and wetlands of Iran with chitinolytic activity, applying colloidal chitin as a sole source of carbon in culture media.

**Methods:** A total of 100 halophilic strains were selected for this study. Modified Growth Medium (MGM) supplemented with 1% colloidal chitin and 23% total salt was used for qualitative assay of chitinase. After incubation at 40˚C and spending appropriate time, chitinolytic activity was visualized by a clear zone around colonies.

**Results:** Among 100 strains, we were able to obtain 3 chitinase - producing haloarchaea. Phylogenetic studies showed that these strains belonged to genera including Haloarchaeobius, Halorubrum and Haloarcula.

**Conclusion:** This research showed that halophilic archaea from different saline environments in Iran, have a potential of producing hydrolytic enzymes, which can possess commercial value. Our further investigations will measure the enzyme activity and optimize the enzyme production by potent archea.

**Keywords:** Chitinases, Halophiles, Archaea

# P311 - 887: THE INFLUENCE OF VERMIREMEDIATION ON THE MICROBIAL SPECIES OF GAS OIL CONTAMINATED SOILS

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**Background and Aim:** With increscent development of oil industrial sector, soil pollution increase. Different oil products like gasoline, diesel or heavy oils can cause soil contamination. Removal or reduction oil contaminants of soil have always been one of the important environmental issues. Earthworms are highly adaptable and have a large reproductive capacity, showing high tolerance and resistance to organic pollutants. Vermiremediation is the use of suitable earthworm species for the removal of soil pollutants or reduction in an eco-friendly manner and without complicated devices. Earthworm action in the soil improves aerobic biodegradation and can indirectly enhance gasoil biodegradation through changing the structure and biomass of soil microbial communities. The aim of this study was to identification of dominant bacterial species in the presence of earthworms in soil pollutant with gas oil.
**Methods:** The amount of 3% (v/w) gasoil was added to 0.5kg of soil and transferred into pots and 20 earthworms (Eisenia fetida) were added to pots. The dominant colonies were cultured in Bushnell Hass Broth medium via gasoil as the carbon resource. The colony forming bacteria were identified using 16S rRNA sequencing method.
**Results:** A number of bacteria were determined as gas oil decomposing includes Rhodococus conchipurensis, Gordonia tertae, Ensifier meliloty, Agrococcus lahaulensis, Bacillus aerophilus, and Bacillus mojavensis. The bacterial specie Ensifer meliloti that was identified as gasoil degrading bacteria was not registered and reported in previous researches.
**Conclusion:** Earthworm can increase microbial activities by exposing organic materials to indigenous soil microbes which in turn accelerates bioremediation processes.

**Keywords:** Soil pollution, earthworm, vermiremediation, bacterial community

# P312 - 898: EFFECT OF MEDIA COMPOSITION ON GROWTH PATTERN OF CHLORELLA VULGARIS

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**Background and Aim:** Microalgae are the most important producers in aquatic systems. By physiological changes they response to the environmental conditions where they grow and their cultivation is strongly influenced by components of the culture medium. Chlorella is the most cultivated green microalga for its applications in the pharmaceutical and cosmetics industries. In order to gain the best of the algae growth, culture status should be optimized. The aim of this research was to evaluate the media composition on the growth of this strain.

**Methods:** Chlorella vulgaris was cultured in six different growth media: F/2, RM, BG11, BBM, BM and Proteose. The experiments were carried out in 250 mL Erlenmeyer flasks containing 125 mL of medium kept under controlled conditions as follow: light intensity of 3000 lux, light/dark cycle (14:10 hours), at 25°C on an orbital shaker, 120 rpm for 14 days. Chlorella growth was followed through optical density (620 nm), cell count and dry weight. Changes in pH value of culture media were measured during the growth.

**Results:** The growth curve of chlorella vulgaris in different media was obtained. Among six media the highest obtained cell density was 4.668×107 cell m L-1 in RM media, while the lowest one was 6.95×106 cell m L-1 in BM media. The maximum dry weight (0.572 g L-1 ) achieved using RM media.

**Conclusion:** There are significant differences in growth of chlorella vulgaris in these culture media. According to these results, selection of culture medium is essential for biomass production and best growth performance.

**Keywords:** Cell growth, chlorella vulgaris, media composition

# P313 - 903: EVALUATION OF DRINKING WATER ENTRIT VIRAL CANTAMINATION IN THE SOMESARA PROVINCE

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**Background and Aim:** Water is one of the most basic human needs and the main components of food and flavoring. Hence, the provision of safe drinking water one of the most important issues in many countries, water viral contamination is very common in developing countries. Viruses are important in human health and there aren't any standard operation procedures in water supply for these until now. The aim of this study is to investigate the viral contamination of drinking water with gastrointestinal viruses in the supply sources and reservoirs of rural drinking water in Somesara province.

**Methods:** In this study, 81 samples of drinking water collected from different areas of the Somesara province and after filtering, they have been evaluated for Adenovirus, Polio virus, Hepatitis A virus, Norwalk like virus and Rotavirus contamination using Real Time PCR. For this method primers for each viruse were performed and it was used syber green stain.

**Results:** Fortunately, no viruses are detecting in these samples.

**Conclusion:** This result was showed the good hygienic condition in rural zones. It may be the results of good training of people and using the good equipments.

**Keywords:** Viral water contamination, Rotavirus, Polio virus, adenovirus, Hepatitis a virus, Norwalk virus, Somesara

# P314 - 929: IMPACT OF WASTEWATER TREATMENT PROCESS ON ANTIBIOTIC-RESISTANT HETEROTROPHIC BACTERIA

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**Background and Aim:** Heterotrophic bacteria have a significant role in disseminating antibiotic resistance to the environment. In the present study, we examined the effect of wastewater treatment process on the bacteria resistant to sulfamethoxazole (SMX), erythromycin (ER), and chloramphenicol (CHL).

**Methods:** We investigated a treatment plant, in which partially aerated lagoons were used. In total, 32 samples were collected from 8 specified locations (from treatment entry into downstream). Antibiotic resistance was measured using a modified HPC assay. According to CLSI Standard, the density of antibiotics used in the R2A culture medium equaled 50.4, 15, and 16 µg/mL for SMX, ER, and CHL samples, respectively. After dilution (10-3), the samples were cultured and, then, incubated at 37°C for 24-48 h. The results were reported as CFU/mL.

**Results:** The mean of bacteria resistant to SMX, ER, and CHL was 2.3×104, 2.3×104, and 3.4×104 CFU/mL, respectively. According to the results, only the value of CHL-resistant bacteria was decreased (88.9%) in the treatment process, while those of SMX- (51%) and ER-resistant bacteria (16%) were increased.

**Conclusion:** The effect of water treatment plants using partially aerated lagoons differs on antibiotic-resistant bacteria. Therefore, it is necessary to improve common treatment plant processes and utilize advanced processes in order to remove/decrease antibiotic-resistant bacteria as an environmental and human pollutant.

**Keywords:** Antibiotic resistance genes (ARGs), tetW, ctx-m-32, aac3 -1Uidiwncep Mvepveie evienva eUv

# P315 - 934: ANTAGONISTIC ACTIVITY OF THREE SEWAGE ISOLATED BACTERIOPHAGES ON THE MULTIDRUG RESISTANT PATHOGENIC BACTERIA

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**Background and Aim:** Bacteriophages have been proposed as specific alternative for chemotherapy against multidrug resistant bacterial infections. The aim of the present study was the isolation and purification of bacteriophages from swage, which were effective against multidrug resistant bacterial isolates and detection of their morphological characteristics.

**Methods:** Swage and clinical samples were used for the isolation of antibiotic resistant pathogenic bacteria. The bacteriophages were isolated and purified from swage samples by overlay cultures of the isolated bacteria after centrifugation and filtration procedures.

**Results:** Three isolates of the most multidrug resistant Escherichia coli, Klebsiella pneumonia and Pseudomonas aeruginosa selected for bacteriophage isolation. Most of the isolates were resistant to different classes of antibiotics in the aminoglycosides, cephalosporins, macrolides, tetracyclines and β-lactam antibiotic groups. The isolated bacteriophges showed different plaque morphologies on the bacterial cultures. The three purified bacteriophages had icosahedral or hexagonal heads. Long tails observed in Escherichia coli bacteriophages, with the total length of about 170 nm for the phages particles; short tails observed in Klebsiella pneumonia phages particles, with the approximate total lengths of 150 nm; and short tails with the approximate 35 nm total particles length observed in Pseudomonas aeruginosa bacteriophages.

**Conclusion:** Phage therapy is proposed as a suitable supplement for antibiotic therapy and effective phages can be isolated from natural areas in Iran.

**Keywords:** Bacteriophage therapy, Sewage, Pathogenic bacteria

# P316 - 935: INFLUENCE OF PRE-CULTURE CONDITIONS ON THE VIABILITY OF THERMOPHILIC FREEZE DRIED YOGURT STARTERS

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**Background and Aim:** Viability of freeze-dried bacteria is from the important challenges in starter culture production for nutritional marketing. The aim of this study was isolation of thermophilic LABs from yogurt samples and maintenance of their viability by optimization of pre-culture conditions before lyophilization process.

**Methods:** Thermophilic lactic acid bacteria were isolated from yogurt in M17, MRS and EMB media. Identification of bacteria was done by alignment of 16SrRNA sequences. Pre-culture conditions before lyophilizatin were optimized in 9 treatments which designed by Qualitek-4 Software; according to growth temperature and pH as well as the ratio of inoculated bacteria. The ratio of viable bacteria in freeze dried product and milk coagulation time were recorded for assessment of the experiments results.

**Results:** Both thermophilic yogurt starters: Streptococcus thermophilus and Lactobacillus delbruekii subsp. bulgaricus were isolated and identified from yogurt samples. Minimum milk coagulation time and maximum pH decrease obtained when 70% Lactobacillus delbruekii subsp. bulgaricus and 30% Streptococcus thermophilus were used in the growth conditions of 40°C and pH=6. Final count of Lactobacillus delbruekii subsp. bulgaricus in this treatment was 71.4% of total LABs which was more than the viability of Streptococcus thermophilus (28.6% of total LABs).

**Conclusion:** Results of this study indicated the importance of pre-culture conditions especially the ratio of inoculated bacteria in maintenance of the viability of starter cultures during freeze drying process and the velocity of dairy production.

**Keywords:** Yogurt starter cultures, Freeze-drying, Pre-culture condition, Viability optimization

# P317 - 944: ANTIFUNGAL EFFECT OF LAWSONIA INERMIS (HENNA) ON CANDIDAL VAGINITIS IN RAT

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**Background and Aim:** Vulvovaginitis is a common disease in the genital area that annually affects millions of women worldwide. The most common agents of this infection are bacteria and Candida. Candida albicans (C. albicans) is the second cause. Candida species isolated from vulvovaginal candidiasis (VVC) showed drug resistance to common treatments so disease recurs. Recurrent VVC (RVVC) affects 5 to 8% of women with no predisposing factors. The aim of this study was Assessment of antifungal effect of Lawsonia inermis on candidal vaginitis. The plant is famous for its anticancer and anti-inflammatory activities.

**Methods:** Thirty-five rats were divided into 5 groups. Groups include: control positive and negative, Basic dose and double dose treatment and Clotrimazole cream treatment groups. All groups, except the negative control group, were infected with about 2×108 cell/ ml C. albicans, a vaginal isolate ( No: Ca 43 DDBJ). Then, all groups except the control groups were treated vaginally by a week. Sampling from vagina was performed before and after infection and after treatment by swab on Sabouraud glucose agar.

**Results:** Double dose Henna Cream and Clotrimazole were caused complete remove of infection within a week but basic dose cream within two weeks despite a significant reduction in the number of Candida grown in the medium. Recurrent infection was not seen in rats.

**Conclusion:** In the present study, Lawsonia inermis exhibited effect against Candidal Vaginitis and this study validates the traditional use of the plant in fungal infections.

**Keywords:** Lawsonia inermis, Candidal vaginitis, antifungal, Candida albican, rat

# P318 - 966: MEDIA SELECTION FOR GROWTH OF LENTINUS EDODES (AGARICOMYCETES) IN SOLID AND SUBMERGED CULTURES

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**Background and Aim:** Lentinus edodes (Shiitake mushroom) is the medicinal macrofungus showing potential for therapeutic applications. Our goal was to select the medium growth of solid and submerged mycelial cultures of Lentinus edodes in order to accelerate the time of growth and obtain more biomass.

**Methods:** Four media, Potato dextrose agar or broth (PDA or PDB), PDA or PDB + 17 g/L Glucose (PDAG or PDBG), Malt extract agar or broth (MEA or MEB) and MEA or MEB + 17 g/L Glucose (MEAG or MEBG) was studied for growth of Lentinus edodes. In solid culture, a plate was inoculated with a 5 mm disk of L.edodes mycelia and incubated at 30 °C until all of the plate surfaces were covered with L.edodes mycelia. In submerged culture, the media was cultivated with 10% (v/v) inoculum and incubated at 28°C and 180 rpm for 18 days.

**Results:** In solid culture, the higher growth was showed in MEAG and MEA in which plates surface were covered after 18 days while in PDA and PDAG plate surface were covered after 30 days. In submerged culture, the maximum growth was observed in MEBG with 5 g/L cell dry weight (CDW).

**Conclusion:** The suitable medium for growth of L.edodes MEBG in which have 50% higher growth than other studied media.

**Keywords:** Lentinula edodes, media selection, submerged cultivation, mycelia growth

# P319 - 969: MICROSCOPIC FUNGI, A NEW CHALLENGE IN WATER QUALITY MONITORING

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**Background and Aim:** Recently, the occurrence of fungi in drinking water has become a worthy field for different researches.

**Methods:** The occurrence of fungi in distribution system not only changes the water taste and odor, but it may cause technical and operational problems too. Water distribution system may be a source of fungal infection which leads to mycotoxicosis, mycosis, and allergies.

**Results:** These organisms may be inhaled or ingested while taking shower or in the sauna or may be transmitted through abraded mucous membrane in the oral cavity, skin and cornea, or directly into the blood and internal organs in special circumstances such as catheter insertion, peritoneal dialysis or surgical procedures. This will be more critical for patients with immunodeficiency and hospitalized high risk patients.

**Conclusion:** Regarding that this is a new field of investigation in water distribution system and there is limited knowledge about it, this article reviews the literature to provide new ideas in water operation and nosocomial sections to make a background for more investigations.

**Keywords:** water quality, distribution system, nosocomial infection, fungi

# P320 - 982: REVIEW ON ASSOCIATION BETWEEN CORALS AND THEIR SYMBIOTIC MICROORGANISMS FROM THE ECOLOGY AND BIOTECHNOLOGY PERSPECTIVE

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**Background and Aim:** Corals have a diversity of prokaryotic communities as an internal or external symbiotic. This review will examine the association between corals and their symbiotic microorganisms from the ecology and biotechnology perspective.

**Methods:** In this study, articles were examined which indexed in Pubmed, Science Direct, Google Scholar and Scirus databases. Keywords we used included coral, symbiotic microorganisms, ecology, and biotechnology. Finally, overall of 120 articles and reports, 103 articles were evaluated by eliminating the same articles.

**Results:** The Corals symbiotic microorganisms stay on in the ecological niches such as the surface mucus layer, tissue and their skeleton. They play role in the cycle of sulfur, nitrogen fixation, production of antimicrobial compounds and protect corals against pathogens. Many bioactive compounds which attributed to invertebrates such as sponges and corals in fact they are produced by symbiotic bacteria. Various metabolites produced by these microorganisms can be used as medicine. Five screening strategies including conventional screening, met genomics, genomics, combinatorial biosynthesis, and synthetic biology are used for marine microbial natural products discovery and development.

**Conclusion:** According to the collected material we can be concluded that, the ecological studies about the natural association between corals and their symbiotic microorganisms were technological prerequisite for biomedical research and they make clear the road to attainment to bioactive compounds in fauna. Also, in the first step, it is recommended that modern technology and advanced screening methods used to identification of marine organisms and then to identify secondary metabolites among them.

**Keywords:** Coral, Symbiotic microorganisms, Ecology, Biotechnology

# P321 - 998: PRODUCTION AND OPTIMIZATION OF BACTERIAL NANOCELLULOSE BY GLUCONOACETOBACTER XYLINUS PTCC 1734

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**Background and Aim:** Bacterial Nanocellulose (BNC) is an emerging nanomaterial with unique properties produced by several species of ubiquitous fermentation bacteria. BNC has been used for a variety of commercial applications including textiles, cosmetics, and food products, and it has a high potential for medical applications. The aim of this study was Production and optimization of bacterial Nanocellulose (BNC) using different carbon source by Gluconoacetobacter Xylinus.

**Methods:** Different carbon sources include glucose, maltose, mannitol, sucrose, glycerol and Gluconoacetobacter Xylinus were incubated to the Hestrin -Schramm medium. All produced cellulose layers were studied by dry weight and yield. Only 3 carbon source had the highest cellulose production were studied by X-ray diffraction (XRD) and Scanning Electron Microscopy (SEM).

**Results:** The results showed that the highest dry weight and yield with the use of maltose as the carbon source was 2.37 g/L and 6.44%, respectively. Then, sucrose showed the best yield after maltose. SEM micrographs showed nanofibers of the maltose has better surface adhesion than the other.

**Conclusion:** This study showed that maltose and sucrose are a good carbon source to produce bacterial nanocellulose by Gluconobacter Xylinus in Hestrin- Schramm medium.

**Keywords:** Bacterial Nanocellulose (BCN), Gluconobacter Xylinus, Carbon source, Hestrin-Schramm

# P322 - 999: PROBIOTIC BIOMASS PRODUCTION FROM VEGETABLE WASTE BY LACTOBACILLUS CASEI: OPTIMIZATION BY TAGUCHI DESIGN OF EXPERIMENTS (DOE) METHODOLOGY

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**Background and Aim:** Probiotics are defined as a live microbial feed supplement that beneficially affects the host by improving its intestinal balance. Several studies have shown that the addition of probiotics to food provides health benefits including reduction in the level of serum cholesterol, improved gastrointestinal function, enhanced immune system, and lower risk of colon cancer. The aim of this study was to investigate the effect of different parameters on probiotic biomass production from vegetable waste by Lactobacillus casei.

**Methods:** Lactobacillus casei PTCC 1608 was obtained from the Iranian Research Organization for Science and Technology (IROST). Taguchi Design of Experiments (DOE) Methodology was applied to evaluate the effect of different carbon sources (glucose, sucrose, lactose), nitrogen sources (yeast extract, peptone, ammonium nitrate), inoculum size (5, 10, 15, 20%), temperature (25, 30, 35, 40 °C) and pH (4, 5, 6, 7) on probiotic biomass production.

**Results:** The results showed that the highest amount of biomass was obtained when glucose was used as a carbon source, yeast extract as a nitrogen source, inoculum size 10%, temperature of 35 °C and pH of 5.

**Conclusion:** In the present study, the effect of different carbon sources, nitrogen sources, inoculum size, temperature and pH on probiotic biomass production by L. casei was studied. The results showed that vegetable waste is a suitable substrate for the production of probiotic biomass.

**Keywords:** Probiotic biomass, Lactobacillus casei, Taguchi Design of Experiments

# P323 - 1005: ANTIMICROBIAL ACTIVITY OF THREE ESSENTIAL OILS A PHYTOPATHOGENIC BACTERIA, XANTHOMONAS CAMPESTRIS.

Maryam Mizabi asl[1]

**Background and Aim:** There are many essential oils that have been evaluated for their potential for antibacterial activity against phytopathgenic bacteria. The major aim of this study was to determine the antibacterial activity of the essential oils from Satureja hortensis, Ziziphore tenuir, Trachyspermum amm against, phytopathogenic microorganism, Xanthomonas campestris.

**Methods:** The MIC (minimal inhibitory concentration) and MBC (minimal bactericidal concentration) tests were carried out by the broth microdilution method. The essential oils were dissolved in sterilized YMB medium supplemented with Tween-80 at final concentration of 0.5% (v/v). Serial two-fold dilutions from 0.01-200 (µl ml-1) of the essential oils were prepared and distributed into a 96-well micro-titer plate . One hundred microliter of the sample of each concentration were dispensed into the wells of a micro-titer plate. Each well was then inoculated with 100 µL of the microbial suspension. The final concentration of the suspension was adjusted to 107 CFU ml-1, and the plate was incubated under aerobic condition at 28 °C for 24 h. After incubation, the wells were examined for growth of microorganisms and the MIC was determined. MBC and MFC were confirmed by reinoculating on agar plates with 10 µl of each culture medium from the microplates. The number of CFU ml-1 was determined after 24 h of incubation at 28 °C.

**Results:** Antimicrobial effect of essential oils was same (MIC=1.56% v/v / MBC=0.078).

**Conclusion:** The potential properties of these EOs as economical biocontrol in agriculture is discussed.

**Keywords:** Antimicrobial, essential oil, phytopathogenic, Xanthomonas

# P324 - 1020: ISOLATION OF BISPHENOL-A BIODEGRADING BACTERIA FROM SOIL OF GARBAGE DEPOT LOCATION

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**Background and Aim:** Bisphenol-A (C15H16O2) as an organic material is used in manufacture of epoxy resins, polycarbonates and Polysulfones in industry. This toxic compound interferes with the functioning of the endocrine glands and the development of living organisms. The garbage depot site is one of the places where bisphenol-A penetrates into the soil through leachate and contaminates soil, groundwater and surface water.

**Methods:** In this research, 50 soil samples impregnated with leachate were collected from garbage depot location. Samples are cultivate in basal salt medium containing 100 ppm of bisphenol-A as sole carbon source with pH=7.2, and incubated at 30°C in shaker incubator for 24 h and then subcultured in in Luria-Bertani agar (LB) medium and incubated at 30°C for 24 h to isolate individual bacterial colonies.

**Results:** Bacterial colonies were evaluated differentially based on culture, staining, and biochemical properties and isolates were recognized with molecular method (PCR) by amplification of 16s ribosomal RNA and two bacteria such as pseudomonas putida and Borkholderia senocepacia were isolated.

**Conclusion:** Non biologic degradation of Bisphenol-A occurs through photochemical processes and it's biodegradation is carrying out with the activities of some microorganism in high efficiency. Bisphenol-A is toxic for microorganism but pseudomonas putida can well biodegrade it.

**Keywords:** Bisphenol-A, Degrading bacteria, Garbage

# P325 - 1026: POTENTIAL OF THE ARRANGEMENT OF PKS ENZYMATIC DOMAINS FOR CHANGING FINAL BIOACTIVE MOLECULES IN FUNGI

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**Background and Aim:** Secondary metabolites are majorly assembled in PKS type I and or NRPS enzymatic pathway in fungi. Structural and functional heterogeneous in PKS and NRPS enzymes lead to a large variation in their products. Here we aimed to find the possible relation between the number and arrangement of domains in the PKS enzymes and their final products.

**Methods:** Nucleotide and amino acid sequences of 27 fungi with known bioactive compounds synthesized by PKS enzymes were investigated. The amino acid sequences of the domains were classified by their length and number. Alignment of the amino acid sequences was done using ClustalW method to define the domains.

**Results:** Four out of 27 enzymes synthesize THN using a PKS enzyme composed of 5 domains; KS-AT-ACP-ACP-TS, in Aspergillus fumigatus, Exophiala dermatitidis, Glarea lozoyensis and Nodulisporium sp. THN is synthesized in Colletotrichum lagenarium with addition of a DH domain in the third position as; KS-AT-DH-ACP-ACP-TS. Omitting one of ACP domain converts the bioactive molecule "THN" to aflatoxin in Aspergillus parasiticus. PKS type I carrying 4 and 5 domains as KS-AT-DH-KR and KS-AT-DH-KR-ACP produce methylsalicylic acid in Aspergillus parasiticus and Aspergillus terreus respectively. With only one ER domain insertion in this enzyme the final product; methylsalicylic acid, changes to T-toxin.

**Conclusion:** Taken together, most likely the arrangement of PKS domains and the final bioactive molecules are directly correlated. Therefore, using new arrangements in PKS domains, metabolic engineering is potentially possible.

**Keywords:** Bioactive molecule, Methylsalicylic acid, PKS, THN, T-toxin

# P326 - 1029: USE OF FMD PROMOTER FOR EXTRACELLULAR EXPRESSION OF HUMAN GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR IN PICHIA PASTORIS

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**Background and Aim:** Granulocyte-macrophage colony stimulating factor or GM-CSF has also been well-known as CSF2 and CSFβ is a pleiotropic cytokine which originates from different cell sources, including macrophages, lymphocytes, fibroblasts, eosinophils, blast cells and mast cells. As a pleiotropic cytokine, it has a wide range of activities, including generation of neutrophils, eosinophils, macrophages/monocytes and dendritic cells through the stimulation of hematopoietic precursor cells in the bone marrow.In the current study, we state the cloning and extracellular expression of human GM-CSF in Pichia pastoris. The use of FMD promoter and optimization of hGM-CSF gene based on codon bias in Pichia pastoris were the novelty of our work and finally the major objective of this study was to develop expression capacity of Pichia pastoris for scaling up rhGM-CSF production.

**Methods:** The optimized hGM-CSF gene was subcloned into PEPα101 expression vector. Three different culture media were used for hGM-CSF expression and SDS–PAGE, Western blot and bioactivity assay used for qualitative assessment of rhGM-CSF expression.

**Results:** The position pattern of rhGM-CSF on the PVDF membrane indicated that rhGM-CSF was glycosylated in a wide extent of 14-70kD and rhGM-CSFs with the size of 14kD are equal to those produced in E. coli also considered as the unglycosylated rhGM-CSF. The bioactivity assay showed that rhGM-CSF had a significant effect on the cell proliferation.

**Conclusion:** This results confirm that FMD promoter may has enough capacities to be used in Pichia pastoris and also be a novel choice for scaling up of hGM-CSF production in this host.

**Keywords:** GM-CSF, Pichia pastoris,FMD promoter, extracellular expression

# P327 - 1032: EVALUATION OF MICROBIAL WASTES DISPOSAL METHOD OF MICROBIOLOGICAL LABORATORIES

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**Background and Aim:** With population growth and rising health and health expectations today, various health care providers such as hospitals, clinics and specialized laboratories have been established, which has led to an increase in the production of medical wastes on a routine basis. Waste management is done to prevent pathogens for employees, patients, and society and the environment and in this regard, the purpose of conducting a risk-free operation is to reduce the potential risks of waste as well as to protect the environment.

**Methods:** In the usual way, they are placed in a bag in order to risk their microbial wastes, and the TST stip or biological vial is put out of the bag after closing, and the autoclave is carried out for 30-15 minutes. The microbial wastes were examined for 20 days and the TST strip and biological vial were placed inside and outside the bag and the results were examined.

**Results:** In 20 strips out of bags and vagabonds, biologic vials, color changes, and autoclave and risk-free were done. However, in the bar inside the bag, 9 strips were changed and in 8 vials there was a risk-free operation, indicating the difference between the inside and outside of the bag.

**Conclusion:** It seems that by placing a biologic bar or vial inside the bag, risk-taking and color changes are done more correctly and more realistically, or it can be done in labs by increasing the time of autoclave, and autoclaving, as well as proper risk-taking action.

**Keywords:** Microbial wastes, disposal method, microbiological laboratories

# P328 - 1036: IDENTIFICATION OF HELICOBACTER PYLORI INFECTION BY STANDARD PCR METHOD IN COMPARISON WITH UREASE METHOD

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**Background and Aim:** Helicobacter pylori is one of the most pathogenic microorganisms in human societies that at least half of the worlds people are infected with this bacterium. One of the most commonly used diagnostic methods is urease test. The base of the urease test is that helicobacter pylori produces urease enzyme and causes ambient color changes from yellow to red. In addition , studies have shown that the PCR method has a high sensitivity and specificity for Helicobacter pylori detection. The aim of this study was is comparing the urease test and PCR method for the detection of Helicobacter pylori infection.

**Methods:** After sampling a biopsy unit was transferred to Urease test tubes for rapid urease test (RUT). A specific primer of the ureC genome was designed synthesized from the Helicobacter pylori genome the PCR reaction condition were optimized for reproduction of the desired product and performed for all specimens.

**Results:** At the end,the results of these two tests were compared by spss17. Of the 100 patients participating in the study,47 patients were urease positive and 53 patients had urease negative. After examining the PCR method, 58 were infected with Helicobacter pylori and 42 were not infected.

**Conclusion:** The results of this study indicate that,despite the rapidness and cheapness of the urease test,there are many false positive and negative responses and can be used as a preliminary test for identification of this organism,while PCR is more costly and relatively time-consuming process,it is more accurate and more specific and more sensitive.

**Keywords:** Helicobacter pylori, Urease test, PCR

# P329 - 1056: SOFTWARE BASED MPN ENUMERATION OF AMMONIFYING BACTERIA IN MUNICIPAL WASTEWATER TREATMENT SYSTEM

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**Background and Aim:** Biodegradation of organic nitrogen sources into NH4+, also called "ammonification", is an important part of the nitrogen cycle. Thus, enumeration of ammonifying bacteria can be accounted as one of factors assisting estimation of bioremediation in municipal wastewater.

**Methods:** In this study, the density of ammonifiers in wastewater was estimated using the most probable number (MPN) method. Anaerobic, anoxic and aerobic zone of aerobic pond were sampled from a wastewater treatment complex in Tehran. Then serial dilutions of original samples were inoculated into 3-time repeated test tubes containing "peptone water". Related test tubes were incubated in 25°C for 7 days. Presence or absence of ammonium was investigated using Nessler reagent. To estimate the MPN of denitrifiers, a computational program was used. The Excel-based software was previously developed by a German research group.

**Results:** Concentration of ammonifiers in the anaerobic pond (9.2× ⟦10⟧^14 MPN of ammonifiers per ml) was greater than that of anoxic zone of aerobic pond (4.2× ⟦10⟧^14 MPN of ammonifiers per ml) and more than that of defusion zone of aerobic pond (2.3× ⟦10⟧^14 MPN of ammonifiers per ml).

**Conclusion:** Ratio of population density in three zones of sampling appropriately correlates with energy efficiency which comes from oxygen availability. Measurement of ammonifying populations in different period of times will help to estimate normal fluctuations of ammonifying populations that makes it possible to track and evaluate the adverse tensions to the system.

**Keywords:** Ammonifier, wastewater, nitrogen, MPN

# P330 - 1071: PHENOL BIODEGRADATION BY ENHANCED BIOFILM FORMING BACTERIA IN A MOVING BED BIOFILM REACTOR

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**Background and Aim:** Biofilm reactors are especially well-suited to treatment of toxic wastewater containing slowly biodegradable or toxic compounds due to their resistance to toxic pollutants. Nonetheless, this biofilm system occasionally suffers from the absence of biofilm formation on the carriers.

**Methods:** In this study, three continuous moving-bed-biofilm reactors (MBBR) inoculated with different mixed-cultures, including activated sludge microorganisms (R1), eight enhanced biofilm forming bacteria (EBFB) with both biofilm-forming, phenol-degrading capability (R2) and the combination of both (R3) investigated for phenol synthetic wastewater treatment. Then all reactors were subjected to high organic loading shocks and the amount of phenol degradation was compared by HPLC analysis.

**Results:** Under optimum operation conditions the bioreactors showed phenol degradation efficiencies, higher than 99% at a volumetric productivity of 0.9, 1.3 and 1.8 Kg phenol/m2d (corresponding to 1.93, 2.79 and 3.85 Kg COD/m2d) within 24 h in R1, R2 and R3, respectively. SEM microscopy revealed the formation of active biofilm on the surface of floating carriers in all reactors. Furthermore, R3 was resistance to higher phenol loading shocks; about 2.4 Kg phenol/m2.day in 4 h (compared to 1.9 in R2 and 1.5 in R1). HPLC results confirmed the ability of R3 to degrade greater phenol concentrations than two other reactors.

**Conclusion:** It has been demonstrated that EBFB with both biofilm-forming and contaminant-degrading characteristics are able to promote the immobilization of other microorganisms in biofilm structure and subsequently improve the degradation of contaminants in wastewater.

**Keywords:** MBBR, phenol, biodegradation, enhanced biofilm forming bacteria, biofilm

# P331 - 1074: OPTIMIZATION OF L- ASPARGINASE PRODUCTION ON SOLID STATE FERMENTATION BY USING OF ISOLATED BACILLUS MUJAVENSIS

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**Background and Aim:** Asparaginase enzyme has an important role in the treatment of acute lymphoblastic leukemia. This enzyme because of its anti-neoplastic property is important in the process of chemotherapy. Solid state is a method that provides using of agricultural waste to produce enzymes. The aim of this study was to optimization of L- asparginase production on solid state fermentation by using of isolated bacillus mujavensis.

**Methods:** Experiments has been designed by MiniTab 17 software using Taguchi method. Wheat bran and peanut was used as a solid substrate. As well as the nitrogen source, carbon source, pH, inoculum and moisture were optimized. All designed experiments was done in the laboratory and enzyme was extracted. Asparaginase activity was measured by Nesslerization method. Results were input in the software for analysis.

**Results:** Taguchi method was performed in the 27 runs. Regression analysis shows that combine wheat bran and peanuts as a solid substrate ($p<0.001$) and yeast extract as nitrogen source ($p<0.001$) induces asparaginase production significantly. Finally, an optimum medium that Taguchi methods gives us include combine wheat bran and peanuts as a solid substrate, yeast extract as nitrogen source, pH 6.5, 3% of bacterial inoculation, 150% moisture and 5 g/l glucose as a carbon source that asparaginase production in the optimal medium was 8.87 U/g.

**Conclusion:** Based on this results can achieved to suitable production by using optimization of indigenous strains. May be the needs of country to asparaginase enzyme production be resolved and Importation of this enzyme will not be necessary.

**Keywords:** Asparaginase, Solid State fermentation, Bacillus mujavensis, optimization, Taguchi

# P332 - 1076: DESIGN AND EVALUATION OF STRUCTURAL AND FUNCTIONAL FEATURES OF NEW IMMUNOTOXIN STRUCTURAL EFFECT ON CEA-RELATED MALIGNANCIES IN PSEUDO-PHYSIOLOGICAL CONDITIONS

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**Background and Aim:** Although many drugs have been developed for diagnosis and treatment of cancer, it is still the second cause of death world-wide. finding noble diagnostic and therapeutic procedures is still a demand. Targeted toxic proteins against surface receptors of cancer cells, known as immunotoxins are promising weapons to kill cancer cells specifically. Identifying cancer cell's surface antigens and their ligands is essential in the design and production of immunotoxins.

**Methods:** CEA antigen family collected, and their amount and range of expression were determined. the investigation of immunotoxins related to the selected antigen and their molecular monitoring was performed. the binding affinity of immunotoxin derived ligands and non-immunotoxin protein ligands and their assembly with exotoxin of the Pseudomonas was performed and structural and functional quality was determined. NCBI and Protein Atlas databases were used to extract sequences and measure the amount and extent of expression. Modeller , Haddock ,Pymol and Gromacs programs were used to structural modeling, connectivity assessment , visualization of structurals and assess the stability of the modeled drug respectively.

**Results:** The results demonstrate that CEACAM8 has high expression on the surface of colon cancer cells. CEACAM6 ligand was selected as the best ligand for CEACAM8 with the highest binding affinity.

**Conclusion:** Assembly of selected ligand with death domain derived from A exotoxin of Pseudomonas via a flexible linker resulted in 10 structural model which the best model was selected after simulating the optimal structural and functional quality from the point of view of attachment to the relevant antigen and immunogenicity.

**Keywords:** Immunotoxin, CEA, immunogenicity

# P333 - 1077: MOLECULAR EVALUATION OF MICROCYSTIS SPP. (CYANOBACTERIA) IN THE KOR RIVER WATERS

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**Background and Aim:** Cyanobacteria are present in diverse habitats. Some of them produce hazardous toxins substances such as microcystin which is placed in the hepatotoxins group, and shows its impact on the aquatics and humans in the form of the liver failure and death. So, the aim of this study was isolation and identification of Microcystis Spp. through combining the traditional and molecular methods from the Kor river.

**Methods:** For this purpose, totally 30 water samples were collected from 6 stations from the Kor River. At first, samples were serially diluted, then they were cultivated on BG 11 medium and incubated under illumination of 1500-2000 lux at 28±2℃ with 12:12 h light: dark regime. After incubation time, different colonies were purified on new media. For molecular identification, genome of each purified isolates was extracted by modified DNG kit. Entirely, regarding Microcystis Spp. detection, the molecular identification of the isolates was performed by MIC-431R/MIC-184F primers.

**Results:** The results indicated that although Microcystis Spp. was not isolated from Kor River waters, other types of cyanobacteria were isolated by traditional and molecular techniques and confirmed by PCR method.

**Conclusion:** As a cosequence, since the water of this river is used by the farmers and ranchers, paying attention to this group of microorganisms is very important. So, this needs periodic investigation in different seasons of the year in the Kor River.

**Keywords:** Cyanobacteria, Microcystis Spp., PCR, Kor Rive

# P334 - 1079: EXPRESSION OF AN ANTIBODY FRAGMENT (SCFV) AGAINST AMYLOID-BETA USING T7 PROMOTER IN FED-BATCH CULTIVATION MODE

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**Background and Aim:** Passive immunotherapy with monoclonal antibodies (mAbs) against Aβ(Amyloid-beta) is in late clinical studies of preventing Alzheimer's disease(AD). The aggregation of Aβ species is thought to play a pivotal role in the disease progression of AD. Recombinant protein expression technology is the most important approach for production of biomolecules. Appropriate protein folding and its solubility is one of the challenges. Media optimization, co-expression of chaperones like T7 promoter and reducing the temperature are some of the strategies to improve these challenges. EnBase (a kind of fed-batch system) culture mode growth is controlled and pH is constant during cultivation.

**Methods:** In the current study, the expression yield and solubility of Aβ antibody was analyzed using T7 promoter in fed-batch cultivation mode. PCR amplification of Aβ was carried out using the specific primersand cloned in the HI-Control 10G cells of Lucigen kit. After transforming the cloned gene, the recombinant Escherichia coli10G cells were cultivated in batch and fed-batch culture medium. Protein expression was induced by IPTG.The expression and solubility of Aβwas investigated in two different temperatures (25 and 30°C). Protein expression was analyzed by SDS-PAGE and Western blotting technique. G-image program was used for further study of the amount of the protein expression.

**Results:** The maximum expression of protein and cell density was observed in Enbase cultivationsystem. The solubility of proteinwas slightly increasedin Enbase medium.

**Conclusion:** Therefore, due to slow and continuous release of glucose and controlled growth, a highly protein expression and solubility of Aβ was obtainedin fed-batch cultivation mode.

**Keywords:** Amyloid-beta, Enbase, Escheriachia coli, T7 promoter

# P335 - 1088: ISOLATION AND SCREENING OF IRANIAN QUERCUS ENDOPHYTES AGAINST TS GENE

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**Background and Aim:** Obtaining bioactive molecules from endophyte fungi has been a considerable strategy for providing medicine in a large amount as well as in a low expense. In addition the endophytes are rich resources of unknown molecules to be introduced in pharmacy.

**Methods:** To study the potential in producing taxan like compound, here the endophyte fungi were isolated from Quercus sp. from Kurdistan forest. 46 fungi were isolated and morphologically and molecularly identified. The isolates were subjected to DNA extraction and molecular screening for ITS 1, 4 and Taxol Synthase (TS) genes. The amplicon from ITS 1, 4 were digested with MnlI to provide a simple identification method. Sequencing analyses was done for 12 isolates.

**Results:** Based on the MnlI digestion patterns, 12 isolates were sequenced. NCBI BLAST analysis services revealed that about 45% of the 12 isolates belonged to the genus Alternaria and about 40% were similar to the genus Penicilium. Aspergilus, Mucor, Rhizopus and Ulocladium were the genus with only one member in our Quercus endophytes collection. Molecular screening for TS genes showed the DNA fragment 600 bp in size for four out of 46 isolates. The sequencing results showed 46% similarity to TS gene from the Yew tree.

**Conclusion:** Our results for endophytes identification were compatible with the literature. More chemical and molecular investigations are needed to prove the potential of Quercus endophytes for synthesizing taxan like compound.

**Keywords:** TS gene, Endophyte, Fungi, Quercus

# P336 - 1089: COMPARISON OF HEMAGGLUTINATION AND CYTOTOXICITY IN TWO ANTIBACTERIAL PEPTIDES PRODUCED BY NATIVE STRAINS

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**Background and Aim:** Antibacterial peptides are produced by a variety of bacterial strains. They are effective on the similar or closely related bacterial strain(s) specifically. Thus the peptides are recently considered as new antimicrobial agents.

**Methods:** In a preliminary study, two antimicrobial compounds produced by native strains were found in our laboratory. Here the bacteriocin and an endolysin were purified by ammonium sulfate. The antimicrobial activity was analyzed using disk diffusion agar and calculated by the death kinetic assay. The compounds were studied for their cytotoxicity on human lymphocytes followed by measuring the ability of hemagglutination of human RBC.

**Results:** Bacteriocin and endolysin were purified by ammonium sulfate precipitation with 70%, 60% (respectively). The bacteriocin showed relatively high antimicrobial activity. The bacterial population decreased 6 times in the first two hours. Comparison of the cytotoxicity of antimicrobial peptides revealed that the endolysin was 50% more toxic on human lymphocytes than the bacteriocin. Both purified peptides had no impact on the lysis of red blood cell.

**Conclusion:** Based on the negative cytotoxicity effects of the bacteriocin on lymphocyte, and in hemagglutination test, the bacteriocin can be used as an alternative to antibiotics in the therapeutic applications, veterinary, agricultural and food industries.

**Keywords:** Cytotoxicity assay, Hemagglutination test, Endolysin, Bacteriocin

# P337 - 1093: EXPRESSION OF AN ANTIBODY FRAGMENT (SCFV) AGAINST PCRV PROTEIN OF PSEUDOMONAS AERUGINOSA IN FED-BATCH CULTIVATION MODE

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**Background and Aim:** Pseudomonas aeruginosa is one of the opportunistic pathogens which causes frequent hospital-acquired infections that is life-threatening for mechanically ventilated patients. Also, it is a leading cause of death in cystic fibrosis patients. The most important virulence factor of P. aeruginosa is type III secretion system (T3SS) which injects bacterial toxins directly into the cytoplasm of the host cells. PcrV is an important structural protein of the T3SS. The desired anti-PcrV monoclonal antibody has been engineered. In the current investigation, a recombinant scFv monoclonal antibody was developed against the PcrV protein and expressed in EnBase (fed-batch) cultivation system.

**Methods:** The pETiteTM N-His SUMO Kan vector including PcrV gene was transformed into recombinant E.coli (BL21) cells which cultured in the EnBase medium. The expression of recombinant protein was then induced by IPTG. The expression and solubility of PcrV protein was investigated in two different temperatures (25 and 30°C) and different induction time (4, 6, 8, 12, 24 hours). Protein expression was analyzed by SDS-PAGE and Western blotting procedure.

**Results:** Our results showed that EnBase had higher efficiency than LB broth; the maximum level of solubility and total protein expression was observed in Enbase (fed-batch) cultivation system at 30°C and 24 h after IPTG induction.

**Conclusion:** Therefore, due to slow release of glucose, a greater expression and solubility of PcrV-scFv protein can be achieved in Enbase cultivation mode than common method of cultivation. Also, SUMO tag is an effective strategy to improve protein solubility.

**Keywords:** EnBase, PcrV protein, Pseudomonas aeruginosa, scFv

# P338 - 1099: EFFECT OF DIFFERENT ETHYLENEDIAMINETETRAACETIC ACID CONCENTRATIONS ON VIABILITY OF MICROALGAE

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**Background and Aim:** Microalgae have important and different application in biotechnology field such as biofuel, biomass, bioremediation, biofertilization and …. Trace elements availability has a critical role in growth of different organisms such as microalgae. When EDTA was present at a very low concentration, low trace element concentrations had little simulative effect on the growth rate. Despite in the present of higher concentrations of EDTA, availability of trace elements, increase.

**Methods:** For this investigation C.vulgaris was cultivated in 50 ml BG-11 medium, flow rate of 0.9 l/min, LED 12 Watt and 29 °C with the same cell density for different concentrations. BG-11 medium (with 1 mg/lit EDTA) was as a control and serial levels involve 2, 4, 8, 16 and 32- fold of 1 mg/lit EDTA were studied. After definite time OD 580nm was obtained and then 1 ml of each treatment was sub cultured in BG-11 medium for determining of biocidal or biostatic concentration of EDTA. After definite period for growth, OD 580nm was obtained and then percentage of biocidal efficiency was calculated. All experiments had two replicates.

**Results:** C.vulgaris showed a similar growth rate at different concentrations. None of serial levels of EDTA was biostatic for it.

**Conclusion:** The results showed that the use of high concentration of EDTA has no significant effect on C.vulgaris viability. This data can be useful for researchers who want to study the effect of trace elements and Fe concentrations on growth, lipid and pigment production and the other products of this micro alga.

**Keywords:** Trace elements, C. vulgaris, BG11, EDTA

# P339 - 1113: EVALUATION OF BETAGALACTOSIDASE GENES OF XANTHOMONAS CITRI-K37 FOR DIRECT USE OF LACTOSE IN XANTHAN GUM PRODUCTION

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**Background and Aim:** Xanthomonas genus as xanthan producing bacteria possesses a low level of beta galactosidase gene expression and is therefore unable to produce xanthan gum in lactose-based media. Recently, a native strain called Xanthomonas citri-k37 has been identified as a strain of lactose consuming.we evaluate the presence of β-galactosidase genes and xanthan production by X. citri-k37 in cheese whey medium.

**Methods:** For this purpose, the bacteria was cultured on YM broth, then bacterial DNA was extracted and PCR was done by specific primers. In addition, the weight and viscosity of xanthan were measured. Also the enzyme activity was assayed by Miller method.

**Results:** Electrophoresis results confirmed the presence of six specific β-galactosidase genes in this strain. Enzyme activity and xanthan content after 96 hours of starting the process were calculated as 1259 U/mL and 14.5 g/l, respectively.

**Conclusion:** The results showed that the X. citri-k37 strain has the potential to produce xanthan in cheese whey medium

**Keywords:** beta galactosidase, X. citri, xanthan gum, lactose

# P340 - 1115: MORPHOLOGICAL EVALUATION OF PHYTOPATHOGENICITY OF XANTHOMONAS CAMPESTRIS AGAINST BRASSICA OLERACEA VAR. CAPITATA UNDER ASEPTIC CULTURE CONDITION

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**Background and Aim:** This research investigated the method of sterilization and cultivation of the seeds of cabbage (Brassica oleracea var. capitate) and morphological changes of the seedlings grown from the seeds contaminated with Xanthomonas campestris.

**Methods:** Cabbage seeds were disinfected by dipping for 2 min in 70 % (v/v) ethanol, exposing for 15 minutes to 1 % (v/v) sodium hypochlorite and finally drying at room temperature. in order to contaminate the sterile seeds, they were soaked in the bacterial suspension of 4×108 CFU/ml and were incubated for 2 hours. After that, taken out, air dried and cultivated on the soil mineral medium in the glass plates. The plates were transferred to growth chamber with 12 hours of fluorescent light at 28°C. The germinated seeds were counted within 9 days of incubation in order to determine germination rate and percentage and the disease symptoms was examined visually.

**Results:** The germination percentage of the sterile seeds and contaminated ones were 85% and 92%, respectively. The germination rate of the sterile seeds and contaminated ones were 62% and 82%, respectively. The sterile seedlings were healthy but the sign of the disease could be seen on the leaves and the stem of infected seedlings. The seeds that were completely coated with the bacteria was not germinated.

**Conclusion:** The results indicate that the heavy contamination of the seeds could completely inhibited the germination of the seeds and the light contamination could result to defectively growth with deformed and wilted leaves and stems.

**Keywords:** Brassica oleracea var. capitate, phytopathogenicity, Xanthomonas campestris

# P341 - 1119: CLONING, EXPRESSION AND PURIFICATION OF AN ANTI CD3/CD19 BISPECIFIC ANTIBODY

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**Background and Aim:** Bispecific T-cell engager molecules (BiTEs) constitute a class of bispecific single-chain antibodies that can bind to both the pathogenic target cell and T-cells. Therefore, they can recruit and activate T-cells to destroy the target cell without the need for a co-stimulatory signal. CD19 is expressed on B-lineage cells plays a key role in B cell malignancies, thus it has been considered as potential target for several therapeutic monoclonal antibodies (mAbs).

**Methods:** In the current investigation, an anti CD19 and anti CD3 bispecific antibody was cloned and expressed in the E.coli Bl21 strain. The coding sequence of bispecific antibody was extracted from DNA data bank, synthetized and cloned into the pcDNA3.1 expression vector, and then transformed in prokaryotic E.coli (Top 10) host. After confirmation by sequencing, the recombinant vector was transformed into expression host E.coli Bl21 strain cells by calcium chloride based on standard protocol.

**Results:** The expressed protein consist of a 6His-tag in C-terminus, therefore it was purified by Ni-NTA affinity chromatography method. Finally, the expression of CD3/CD19 bispecific protein was confirmed by SDS PAGE and Western blot procedure.

**Conclusion:** Expression of therapeutic proteins like antibody fragments that haven't need to glycosylation is a useful and cost effective approach in biopharmaceutical production.

**Keywords:** Bispecific antibody, Bispecific T-cell engager (BiTE)

# P342 - 1129: DETECTION AND TRACING OF SHIGELLA DYSENTERIAE BASED ON DNA-NANO BIOSENSOR

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**Background and Aim:** Shigelosis is an entic infection caused by Shigella dysenteriae . Shigella is gram–negative, non-lactose fermenting, non-sporulating and rod ship bacteria that belong to the genus Shigella under the family Enterobacteriaceae.Estimations by WHO that more people in developing country where poor hygiene and limit access to clean drinking water,suffered from diahera caused by S.dysenteriae.The emergence of drug-resistant S.dysenteriae and continuous high disease incidence and more difficult detection and tracing of this bacteria imply that shigellosis is an unsolved global problem. Therefore, rapid and sensitive detection methods for S.dysenteriae are necessary. with high affinity and specificity to a wide range of target molecules, such as drugs, proteins. Here, we applied the IPad prob against S. dysenteriae and to develop an aptamer-based method for the detection an trace. IPad is the conserve sequence and important pathogenic island in S.dysenteriae. So that we select this sequence for design aptamer to construction of DNA-nano biosensore to specific detect of this bacteria. Aptamer IPad, showed particularly high binding affinity in this studies.

**Methods:** 1-dna extraction 2-bio infirmatic study 3-design aptamer 4-bind nanoparticle by aptamer 5-assay specifity and sensivity.

**Results:** Binding assays to assess the specificity of aptamer IPaD showed high binding affinity for S. dysenteriae and low apparent binding affinity for other bacteria

**Conclusion:** Aptamer IPaD showed high binding affinity for S. dysenteriae and low apparent binding affinity for other bacteria. Binding the Q.D and CNM to the aptamer and assay the flourosent of single aptamer ,Q.D-aptamer and CNM-aptamer when bind to specific target in S.dysenteriae provide the highe specify and sensitivy of the IPaD aptamer.

**Keywords:** Shigella dysantriae, Carbon nanotubes, Nanobiosensor

# P343 - 1143: EVALUATION OF THE ANTIFUNGAL PROPERTIES OF THE SEED ESSENTIAL OILS OF ANETHUM GRAVEOLENS AND ECHINOPS SETIFER AGAINST CANDID ALBICANS

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**Background and Aim:** This study investigated the activity of antimicrobial effects of the essential oils belonged to the Anethum graveolens and Echinops setifer against 4 yeasts: Candid albicans, Candid Tropicalis, Sacchaoromyces cervisia, Candid glabrata were investigated.

**Methods:** The essences were extracted by hot water distillation and acetone, ethanol and chloroform used as solvents. Agar dilution was done for the evaluation of antimicrobial activities.

**Results:** The result showed that 250-300 µl essence obtained from roots, stems and leaves of these plants didn't have any anti-yeast effect against these 4 yeasts but this figure was improved when essence extraction was done from their seeds. Seed essential oils of these both plants exhibited considerable inhibitory proportion on disks inseminated with these yeasts.

**Conclusion:** Anethum graveolens essence had more anti-yeast activity than Echinops setifer for 4 Candida isolates.

**Keywords:** Antifungal Activities, Seed Essential oils, Anethum graveolens, Echinops setifer

# P344 - 1147: COMPARING EFFECT OF DIFFERENT IMMUNIZATION ROUTE ON THE HUMORAL IMMUNE RESPONSES INDUCED BY MYCOBACTERIUM TUBERCULOSIS RECOMBINANT PROTEIN

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**Background and Aim:** Study on development of a new vaccine against tuberculosis is the new topic of many investigations. Route of vaccination is one of the most important factors in creating a good immune response and intranasal administration route has increased vaccines efficiency against respiratory infections. in this study, the effects of recombinant ESAT-6/CFP-10 fusion protein as a vaccine candidate in different routes of administration for induction of protective humoral immunity against tuberculosis has been evaluated.

**Methods:** Recombinant antigen ESAT-6/CFP-10 was administered by three routes of IM, IN, and Sc to 8 weeks Balb/C mice with or without adjuvant for three times at two-week intervals. For IM and SC administration routes, adjuvant MF59 and for IN route adjuvant CTB were used. Then, the case-control study was carried out to evaluate the humoral and cellular responses elicited against ESAT-6/CFP-10.

**Results:** The results showed that vaccinated mice with recombinant antigen have higher titers of specific antibodies compared to the control groups. In the comparison between the routes of injections, although sSC and IM routes, were both able to make a good immune response, IN route could activate systemic and mucosal immune responses that had fewer side effects than other aggressive injection routes.

**Conclusion:** This study emphasized that immunization of mice with recombinant ESAT6/CFP10 protein by intranasal route are durable and protective.

**Keywords:** Mycobacterium tuberculosis, intramuscular, subcutaneous, intranasal administration

# P345 - 1155: A MINIATURE CULTURE SYSTEM TO SCREEN CYANOBACTERIA SPIRULINA PLATENSIS CULTIVATION

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**Background and Aim:** High-throughput cultivation and screening methods allow a parallel, miniaturized and cost efficient processing of many samples. These methods however, have not been generally established for phototrophic organisms such as microalgae or cyanobacteria. In this study, a microplate system was used for high-throughput screening of spirulina strains for best mass production by different Carbon, Nitrogen and phosphate substances.

**Methods:** Pure cultures of cyanobacteria Spirulina platensis were used in this study. It was cultivated in sterilized 24-well microplates with different concentrations of nitrate and phosphate concentrations. microplate was putted on shaker under florescent light source in 150 rpm.

**Results:** With this miniature culture system, The effects of different C, N and P sources and pH was examined on microalgal growth and biomass production. also, There was good agreement between Microplate and traditional flasks cultures.

**Conclusion:** The microplate data were comparable to similar data obtained in flask culture.

**Keywords:** Spirulina, Microplate, Biomass

# P346 - 1156: EFFECTS OF DIETARY BUTYRIC ACID AND PROPIONIC ACID ON GROWTH PERFORMANCE, SURVIVAL RATE AND RESISTANCE AGAINST YERSINIA RUCKERI IN CASPIAN ROACH (RUTILUS CASPICUS YAKOVLEV, 1870)

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**Background and Aim:** In the present study effects of dietary butyric acid and propionic acid on growth performance, survival rate and resistance against Yersinia ruckeri in Caspian roach (Rutilus caspicus) have been studied.

**Methods:** In this regard, 3 treatment groups with different levels of dietary butyric acid (0.5%, 1% and 2%), 3 treatment groups with different levels of dietary propionic acid (0.5%, 1% and 2%) in compare to a control group (with no additive in basic food) were considered. During experiment, fish were fed at 3% of biomass twice per day for 60 days. At the end of experiment growth performances were decreased in fish that fed with different levels of dietary butyric acid and propionic acid in compare to fish of the control group.

**Results:** In this study final weight, weight gain, specific growth rate and daily weight gain in fish of all treatments were recorded significantly lower than control ($P<0.05$). On the other hand, there was no difference in condition factor index among all of the experimental groups ($P>0.05$). According to the results dietary butyric acid and propionic acid didn't lead to resistance against Yersinia ruckeri concentration. in this experiment 72.6 % fish of control group dead during one week post challenge on the other hand this there were no difference in mortality of treatments with dietary butyric acid and propionic acid compare with control.

**Conclusion:** Dietary butyric acid and propionic acid has no don't lead to elevation in growth performance and resistance against Yersinia ruckeri in Caspian roach.

**Keywords:** Propionic acid, butyric acid, growth, Caspian roach, stress

# P347 - 1162: PARACOCCUS SP. ISOB 09 A NOVEL FACULTATIVE CHEMOLITHOAUTOTROPHIC BACTERIUM ISOLATED FROM SLUDGE

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**Background and Aim:** The genus Paracoccus belongs to the Alphaproteobacteria and was proposed by Davis et al. (1969), with the type species Paracoccus denitrificans. At the time of writing, 25 species belonging to the genus Paracoccus have been isolated from various environments, including soil, sediment and activated sludge.

**Methods:** In this project, samples collected from available sludge in the refinery of the waste of Industrial factories at Tabriz. The mineral medium containing four solutions was employed for enrichment and isolation of bacterium. Morphological (by gram staining, light and scanning electron microscopy), biochemical (according to Bergey's Manual of Systematic Bacteriology) and physiological (tests for using organic and inorganic compounds) and genetic (DNA extraction, PCR reaction) and phylogenetic (using BLAST software in the EzTaxon for phylogenetic tree drawing) techniques were used to identify the isolated bacterium.

**Results:** The isolated bacterium was Gram-negative and non-motile. The Colony was small rod-shaped and 0.48-0.49 µm in size. ISOB 09 was positive for oxidase and catalase, negative for urease, no H2S production, no citrate utilization, no nitrate reduction, no starch hydrolysis, no gelatin hydrolysis, no TSI and no fermentation (acid-gas production) of glucose, sucrose, maltose and lactose. The ISOB 09 was facultative chemolithoautotrophic and capable of oxidizing thiosulfate, sulfur, sodium sulfide as electron donors. The 16S rRNA gene sequence analysis of the ISOB 09 showed that it was most closely connected to Paracoccus caeni MJ17 (98.18%).

**Conclusion:** Therefore, strain ISOB 09 represents a novel species within the genus Paracoccus for which the name Paracoccus sp. ISOB 09 is proposed.

**Keywords:** Paracoccus, Facultative Chemolithotroph, Sludge, Morphological, Biochemical, Genetic techniques

# P348 - 1163: BIODESULFURIZATION OF SULFUR COMPOUNDS BY HALOTHIOBACILLUS SP. ISOB 14 A CHEMOLITHOAUTOTROPHIC ISOLATED BACTERIUM

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**Background and Aim:** Types of biologically reduced sulfur such as thiosulfate, elemental sulfur, sulfides, sulfite, polysulfides, and polythionates are finally oxidized to sulfate or more precisely sulfuric acid by chemolithoautotrophic bacteria in Biological desulfurization process.

**Methods:** In this project, Postgate medium (mineral medium with four solutions) with various minerals as electron donors (only energy source( were used. These were 0.5 and 0.7% sodium thiosulfate, 1% elemental sulfur, 1% sodium sulfide. The growth, non-growth, and speed in growth was determined by the change in the color of the bromothymol blue indicator and pH reduction of the medium.

**Results:** The ISOB 14 was obligately chemolithoautotrophic and capable of oxidizing thiosulfate, sulfur, and sodium sulfide as electron donors and had no heterotrophic growth. This strain grew faster (18-24 h) in the culture medium with 0.5 and 0.7% thiosulfate than in elemental sulfur and with a slight difference in sodium sulfide for the period of growth and the pH of the medium decreased more than that of the other mediums. Bromothymol blue turned yellow at acidic pH and the color of the medium rapidly changed to yellow.

**Conclusion:** Thiosulfate has been used as the electron donor for isolation of SOB because it is more readily soluble in water than elemental sulfur. The decrease in pH and a color change of Bromothymol blue are evidence of oxidation of thiosulfate and production of sulfate. Bromothymol blue indicator displayed green under neutral pH and yellow in acidic pH. The production of sulfate decreased pH to ≤3, thereby creating acidic conditions in the medium.

**Keywords:** Biodesulfurization, sulfur compounds, Halothiobacillus, Chemolithoautotrophic

Detection and Typing of Microorganisms

## P349 - 15: A REVIEW OF RELATED RESEARCH ON WOUND AND BURN INFECTIONS IN ISFAHAN PROVINCE

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**Background and Aim:** One of the most important consequences of skin lesions especially wounds and burns are infections that are caused by bacteria. Considering the resistance of many infectious agents isolated from wound and burn to antibiotics, these infections could result in considerable deaths, prolongation of hospitalization and increased healthcare costs. In this article, by reviewing the research that was carried out during the past two decades in the field of wound/burn infections in Isfahan province, related infectious agents and their antibiotic resistance patterns are presented.

**Methods:** The published research works that was carried out during the past two decades in the field of wound/burn infections in Isfahan provincehave evaluaed and summerized.

**Results:** In this article, by reviewing the research that was carried out during the past two decades in the field of wound/burn infections in Isfahan province, all related infectious agents and their antibiotic resistance patterns can be summarized as follows: 1-Pseudomonas aeroginosa and P. Fluorescens (.Many isolates have shown the highest resistance to cotrimoxazole, co-amoxiclave and ceftazidime ) 2-Klebsiella pneumonia (with highest resistance to cotrimoxazole) 3-Staphylococcus aureus (With highest resistance to cotrimoxazole ),S.epidermidis and other Staphylococci. 4- Proteus mirabilis and P. vulgaris 5-Acinetobacter baumannii (with highest resistance to penicillin, ciprofloxacin, cefotaxime, ceftazidime and co-amoxiclav ). 6-Esherichia coli (with highest resistance to cotrimoxazole) 7-Serratia 8-Corynebacterium xerosis 9-Enterobacter aerogenes.

**Conclusion:** Considering the resistance and sensitivity pattern of antibiotics, these studies emphasize on the importance of subsequent infections of wounds/burns and assert the need of prevention, control and proper treatment.

**Keywords:** burn infections, bacteria, antibiotic resistance

# P350 - 19: A PYROSEQUENCING-BASED ANALYSIS OF MICROBIAL DIVERSITY IN SPONGES COLLECTED FROM THE PERSIAN GULF

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**Background and Aim:** Marine sponges are a rich natural source of novel chemicals, which are synthesized from the sponges themselves and sponge-associated bacteria. For the first time, this study was aimed to evaluate the diversity of sponge-associated bacteria using 454 pyrosequencing in Iran.

**Methods:** In this study, 10 different species of sponges were collected from the Persian Gulf (Bushehr, Dayer, Asaluyeh) using SCUBA method. DNA was extracted using CTAB method. Then, the bacterial diversity of the sponges was investigated using the high-throughput 454 pyrosequencing of the V1/V3 region of the 16S rRNA gene.

**Results:** All the sponges were clustered into 7 groups based on their bacterial composition. These 7 groups had similar bacterial patterns at the phylum and lower taxonomic levels. Diversity indexes and cumulative rank abundance curves showed the different compositions of bacterial communities in the various groups of sponges. Reads related to the phylum Cyanobacteria and Proteobacteria were observed predominantly (1.2–81.4%) and (8.3-60.8%) in all sponges and followed by Chloroflexi, Acidobacteria, and Actinobacteria. Also, some of the sponges contained many unidentified bacterial groups (e.g. more than half of the taxa at the family level) that were obtained from culture-independent methods.

**Conclusion:** This study was successful to identify the sponge-associated bacteria of the Persian Gulf for the first time in Iran.

**Keywords:** Sponge, Bacterial diversity, 454 pyrosequencing, Persian Gulf

# P351 - 33: RELATIONSHIP OF COA GENE LENGTH POLYMORPHISM WITH THE SOURCE OF CONTAMINATION IN CLINICAL STAPHYLOCOCCUS AUREUS ISOLATES

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**Background and Aim:** Genotyping Staphylococcus aureus (SA) is part of an ongoing monitoring system and an important tool in the study of the origin of strains, clonal relationship and epidemiological outbreaks in most countries. One of the most important factors in SA pathogenicity is coagulase protein encoded by coa gene. It has a variable region gene at the 3'-side. In this study, relationship between coa gene length polymorphism and the source of infection studied.

**Methods:** 160 clinical strains isolated from Nekuei(Hedayati), Kamkar(Arabnia) and Shahid Beheshti gospitals were selected after confirmation by microbial, biochemical and 16 srRNA tests. A pair of primers for amplification of variable region genes were used and the results were analyzed with SPSS software.

**Results:** Amplification of the coa gene of the S. aureus isolates led to 11 fragement gene polymorphisms between 500 to 1000 bp. An amplicon of 700 bp was present in 32 (20%) of the human infection strains and Less than 1% of had 500 bp fragment. The 700 bp fragment was observed more in the Nekuei (Hedayati) hospital.

**Conclusion:** Given the high frequency of 700 bp fragments in S. aureus isolated from livestock in most studies and also the results of this study, can be raised that S. aureus strains have been transferred from livestock to humans especially in the Nekuei hospital .

**Keywords:** Staphylococcus aureus, coa gene, Polymorphism.

# P352 - 40: STUDY OF 3′ REGION LENGTH POLYMORPHISM OF CLFA GENE IN STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM THREE HOSPITALS IN QOM CITY

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**Background and Aim:** Staphylococcus aureus (SA) produce enzymes and various toxins for survival, protein, carbohydrate, lipid and Nucleic acid degradation, drug resistance, attachment to host cells and pathogenicity. One of the most important of surface bacterial virulence is clumping factor or CLF A. It protein cause to connet bacteria- Fibrinogen host cell. The aim of this study was to investigate the existence and possible variations in 3'-end of clfA gene.

**Methods:** 160 clinical strains isolated from Nekuei(Hedayati), Kamkar(Arabnia) and Shahid Beheshti gospitals were selected after confirmation by microbial, biochemical and 16 srRNA tests. A pair of primers for amplification of variable region genes were used and the results were analyzed with SPSS software.

**Results:** All isolates produced 1100 bp amplicons size.

**Conclusion:** According to other studies that were produced 900 to 1000 bp amplicons size by the same primers this is the first report of a gene polymorphism in 3'-end of clfA gene in the world. In this area reported 18 nucleotide minisatellite repeats which causes errors in the DNA replication by DNA polymerase as Replication Slippage. This event has been led to the creation and distribution of new version of the gene in the city of Qom. This study needs further investigation about sequence and encoded protein.

**Keywords:** Staphylococcus aureus, clfA gene, Polymorphism

# P353 - 44: MOLECULAR TYPING OF UROPATHOGENIC E. COLI STRAINS ISOLATED FROM HOSPITALIZED PATIENTS IN GHAEM HOSPITAL IN MASHHAD

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**Background and Aim:** Escherichia coli is one of the causative agents of urinary tract infections in humans. The aim of this study was to assess molecular typing of uropathogenic E. coli strains isolated from hospitalized patients in Ghaem hospital in Mashhad.

**Methods:** A total of 45 isolates of E. coli were isolated from urine samples of hospitalized patients who were diagnosed with urinary tract infection in Ghaem hospital in Mashhad. Escherichia coli isolates were confirmed by standard microbiology methods. Genetic diversity of isolates were examined using ERIC-PCR. The products of proliferation were electrophoresed on 1.5% agarose gel, and their dendrograms were drawn. The data were analyzed by SPSS software.

**Results:** The method used in this study proliferated numerous bands (1-8 bands) ranging from 180 to 1300 base pairs. All E. coli strains were typable by this method and classified into 9 clusters.

**Conclusion:** The results of study revealed that 45 E. coli isolates were genetically diverse and comprise a heterogeneous population. We found the ERIC-PCR as a useful method for molecular typing of uropathogenic E. coli.

**Keywords:** Heterogeneity, Escherichia coli, Molecular typing, UTI, ERIC-PCR

# P354 - 60: BIOINFORMATICS STUDY OF SOME HOUSEKEEPING GENES IN IDENTIFICATION AND DIFFERENTIATION OF NONTUBERCULOSIS MYCOBACTERIA

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**Background and Aim:** Non-tuberculosis mycobacteria is a group of bacteria that lives in environmental sources. These bacteria classified in tow group of slow and rapid growing mycobacteria that both of them isolated from clinical specimens. The purpose of this study is evaluation of three housekeeping genes in identification and differentiation of non-tuberculosis mycobacteria by in sillico study.

**Methods:** In our study we obtained 16S rRNA, rpoB and hsp65 sequences of some (twenty two species) slow and rapid growing mycobacteria from Genebank (NCBI). Then this sequences aligned with clustalW2 and transferred to MEGA 5.0 program. Finally phylogenetic relationships were determined by constructing 16S rRNA, rpoB and hsp65 genes tree using the neighbor-joining algorithm.

**Results:** Phylogenetic analysis based on 16S rRNA, rpoB and hsp65 gene sequences indicated that each of this genes cannot identificated and separate of some species. Also we found that for identification of rapid growth mycobacteria (RGM), rpoB gene is the best option whereas hsp65 is appropriate for differentiation of slow growth mycobacteria (SGM).

**Conclusion:** Due to findings of this study, it seems that for appropriate and accurate identification of non-tuberculosis mycobacteria we must studied several genes simultaneously.

**Keywords:** Non-tuberculosis mycobacteria, hsp65, rpoB, 16S rRNA

# P355 - 61: E. COLI RECA GENE IMPROVES GENE TARGETED HOMOLOGOUS RECOMBINATION IN MYCOPLASMA HYORHINIS

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1. Master of microbial biotechnology

**Background and Aim:** Mycoplasma hyorhinis is an opportunistic pathogen of pigs. Recently, it has been shown to transform cell cultures, increasing the attention of the researchers. Studies on the pathogenesis require specific genetic tool that is not yet available for the pathogen. To address this limitation, we constructed two suicide plasmids pGEMT-tetM/LR and pGEMT-recA-tetM/LR having a tetracycline resistance marker flanked by two hemolysin gene arms. The latter plasmid encodes an E. coli recA, a gene involved in DNA recombination, repair and maintenance of DNA. Using inactivation of the hemolysin gene, which results in a detectable and measurable phenotype, we found that each plasmid can disrupt the hemolysin gene of M. hyorhinis through a double cross-over homologous recombination. However, inclusion of the E. coli recA gene in the construct resulted in 9-fold increase in the frequency of hemolysin gene mutants among the screened tetracycline resistance colonies. The resultant hemolysin mutant strain lacks the ability to lyse mouse bed blood cells (RBC) when tested in vitro ($p<0.001$). The host-plasmid system described in this study, has applications for the genetic manipulation of this pathogen and potentially other mycoplasmas.

**Keywords:** Mycoplasma hyorhinis, Suicide Vector, recA gene, Hemolysin, Inactivation

# P356 - 63: BACTERIA IDENTIFICATION FROM ABDOMINAL CAVITY OF ANDROCTONUS CRASSICUDA

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**Background and Aim:** Scorpions are among the oldest animals on Earth and their body plan has seen little change from when it first appeared in the fossil record. Symbiotic bacteria are commonly found in arthropods and affect reproduction, behavior, longevity and immunity of their hosts. Therefore, symbionts are recognized as key elements driving the evolution and adaptation of arthropods. The south and southwest of Iran with about 95% species of scorpions are the most densely populated areas in the country. While scorpion ecology and biology have been extensively studied, virtually nothing is known about the microbial inhabitants within the scorpion body cavity, and any contribution microorganisms afford to scorpion successes

**Methods:** In this study Androctonus crassicuda were collected in Khuzestan province, the individual internal organs were placed in 5-7 ml of Reasoner's 2 agar (R2A) and TSB until visible growth was detected. Fresh pure bacterial colony used for Polymerase Chain Reaction. Genomic DNA was extracted using mentione extraction kit DNA according to manufacture illustrations. The 16S rRNA sequence was amplified DNA was sequenced compared with 16S rRNA gene sequences available in the GenBank database.

**Results:** Bacteria Identification from body cavity were Staphylococcus saprophyticus, Corynebacterium variabile Bacillus cereus and Bacillus firmus. A total of scorpion were examined to find out the occurrence of Bacillus cereus.

**Conclusion:** Bacteria exist in Androctonus crassicuda in mutual, commensal and/or pathogenic relationships. The sex distribution of infected scorpion in this study may be related to differences between the male and female genitourinary systems or metabolic activity.

**Keywords:** Androctonus crassicuda, abdominal cavity, Bacteria, 16s rRNA

# P357 - 95: EPIDEMIOLOGY OF HUMAN PAPILLOMA VIRUS INFECTION AMONG IRANIAN WOMEN WITH CERVICAL INFECTION — A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Human papillomavirus (HPV) is one of the most current sexual transmitted agents in male and female. Also HPV is associated with gynecologic malignancy and cervical cancer among women worldwide. In present study we sought to determine the prevalence of HPV in Iranian women with cervical infections between 2000-2016 years.

**Methods:** Prevalence of HPV in Iran was determined from 2000-2016 using from databases PubMed, Web of Science, Embase, Cochrane Library, Google Scholar, Iranmedex, and Scientific Information Database (SID). Analysis was performed by Comprehensive Meta-Analysis (V2.0, Biostat) software. Random effects models were used, taking into account the possibility of heterogeneity between studies, which was tested with the Cochran's Q-statistic.

**Results:** The meta-analyses showed that the prevalence of HPV infections was ... % [95% confidence interval (95% CI) ...-…] in Iran. The further stratified analyses indicated that the prevalence of HPV was higher in studies that were done between 2000-2008.

**Conclusion:** Since high rates of HPV infections is a major concern in sexually transmitted diseases (STD) in Iran and in the world, control of high-risk behaviors, vaccination, screening and HPV subtyping can be useful to control of HPV infections.

**Keywords:** Human papillomavirus, HPV, Cervical Infection, Iran, Meta-analysis

# P358 - 105: DISTRIBUTION OF HEPATITIS C VIRUS GENOTYPES AMONG HCV POSITIVE PATIENTS IN IRAN BY PCR-RFLP

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**Background and Aim:** Hepatitis C virus (HCV) is the major cause of chronic liver disease such as acute and chronic hepatitis, liver cirrhosis and hepatocellular carcinoma. Based on its genetic variability, HCV is classified into at least six genotypes and a series of subtypes. Different genotypes are seen in different parts of the world. HCV genotyping is important for prediction of success of chemotherapy and progression of liver diseases.so recent studies have focused on determination of HCV genotypes.

**Methods:** In this study, viral genomic of 86 patients extracted from sera were detected by nested-real time (RT) PCR. PCR products were digested with proper enzymes and studied by restriction fragment length polymorphism (RFLP).

**Results:** The results of PCR-RFLP were as follows: 1a (52.3%), 1b (11.6%), 3a (29.1%), 2a (2.3%), 4 (4.7%). Our results showed that types 1a and 3a were the most prevalent HCV genotypes in our samples.

**Conclusion:** HCV genotyping can be performed with several molecular techniques. According to Furione et al the sensitivity of RFLP for genotyping of HCV is 96.2 %; therefore, we decided to use RLFP for genotyping of HCV in chronic hepatic patients.

**Keywords:** Genotyping, Hepatitis C Virus, PCR, RFLP

# P359 - 149: DIFFERENTIATION OF NON-TUBERCULOSIS MYCOBACTERIA USING PRA METHOD

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**Background and Aim:** Non-tuberculosis mycobacteria as opportunistic pathogens which are commonly isolated from environmental sources. Various molecular methods such as direct sequencing and PCR-restriction fragment length polymorphism (PRA) can be used for more accurate identification and differentiation of Non-tuberculosis Mycobacteria. The present study aimed to assess the ability of rpoB and hsp65 genes in identification and differentiation of Non-tuberculosis mycobacteria using Bioinformatics analysis.

**Methods:** In this study, we collect rpoB and hsp65 gene sequences of twenty-five different species of non-tuberculosis mycobacteria (NTM) from the NCBI website. Then information transfer to clustalW2 software, because we see locations of primers connection. In the final, using CLC Main Workbench 5.0 the RFLP patterns were obtained by cutting the gene sequences with MspI, HaeIII and BsteII restriction enzymes (MspI and HaeIII restriction enzymes for rpoB gene sequences and HaeIII and BsteII for hsp65 sequences) and then based on the results were constructed the phylogenic tree.

**Results:** Based on digestion profiles and phylogenetic trees, can be concluded that the hsp65 gene is more useful than the rpoB gene for the identification of non-tuberculosis mycobacteria.

**Conclusion:** PCR-RFLP (PRA) is a best accurate method for identification of Non-tuberculosis mycobacteria, also we concluded that PCR-RFLP based on the hsp65 gene better than rpoB gene.

**Keywords:** Non-tuberculosis mycobacteria, PCR-RFLP, hsp65, rpoB

**P360 - 194: DETECTION OF ISABA19 IN ACINETOBACTER BAUMANNII AS A DISRUPTING AGENT OF OXA-51**

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**Background and Aim:** Early detection of Acinetobacter baumannii, an emerging pathogen in hospital settings, is of interest. The blaOXA-51-like family had been used as a marker to detect A. baumannii. During an infection outbreak, 14 isolates produced a 1.7-kb PCR band instead of 353 bp for this marker. This work sought the reasons behind the increased marker size.

**Methods:** Characterization of isolates was done by API-20NE, gyrB multiplex PCR and 16S–23S rRNA ITS sequencing. The 1.7-kb band generated and the complete blaOXA-51-like variant were sequenced to find the probable integrated element. Susceptibility testing to various antimicrobials was performed by microdilution. blaOXA-like, metallo-β-lactamases (MBLs), the ISAba1 element and the presence of ISAba1 adjacent to blaOXA-like were sought. rep-PCR, global clonal (GC) lineage determination and multilocus sequence typing (MLST) were performed to analyse the relationship among isolates.

**Results:** Isolates were characterized as Acinetobacter baumannii–calcoaceticus complex by API-20NE. gyrB multiplex PCR and 16S–23S ITS sequencing verified the isolates as A. baumannii. Sequencing of the 1.7-kb band revealed ISAba19 as the disrupting element. The blaOXA-51 variant was blaOXA-66, which was elongated to 2.2 kb due to ISAba19. The blaOXA-23-like family was found in 67% of isolates. MBL genes were not detected; however, ISAba1–blaOXA-23-like was characterized in carbapenem-resistant isolates (53%; 8/15). Isolates were divided into three clusters by rep-PCR. All strains were ST2 and all but one belonged to GC II.

**Conclusion:** Identification of A.baumannii based only on blaOXA-51-like is not reliable. Besides blaOXA-51-like, multiplex PCR of gyrB and rpoB could provide rapid and cost-effective results.

**Keywords:** Acinetobacter baumannii, ISAba19, Molecular identification

# P361 - 205: THE RELATION BETWEEN INCIDENCE OF ABC GENES AND THE INFECTION WITH EBV AND HTLV-1 IN CHRONIC MYELOID LEUKEMIA

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**Background and Aim:** Abstract Multidrug resistance (MDR) in cancer cells is a phenotype whereby cells display reduced sensitivity to anticancer drugs, based on a variety of mechanisms, including an increase in drug efflux, the reduction of drug uptake, the activation of cell growth and survival signaling, the promotion of DNA repair, and the inhibition of apoptosis signaling. Increased expression of the plasma membrane drug efflux pumps, the ATP-binding cassette (ABC) transporters, is involved in MDR. P-Glycoprotein/ABCB1 is a member of the ABC transporter family, and facilitates the efflux of various anticancer drugs, including anthracyclines, vinca alkaloids, epipodophyllotoxins, taxanes, and kinase inhibitors, from cells.

**Methods:** Blood and serum samples taken from every patient and control having thoroughly examined.Bloob samples were collected from both patients and control groups in EDTA tubes. DNA from the peripheral blood of the study subjects were extracted using Promega Wizard genomic kits following the manufacturer's protocol. PCR Technique: In this study one type of PCR were used ( conventional PCR), to detect mutation genes by using four primers as shown in the following table. The primers was supplied by Bioneer (Korea) Organization as a lyophilized result of various picomols fixations. Lyophilized preliminary was disintegrated in a free DNase/RNase water to give a final concentration of 100 pmol/µl and kept as a stock in -20ºC, to prepare 10µM concentration as work primer re suspended 10 pmol/µl in 90 µl of free DNase/RNase to reach a final concentration 10 µM.

**Results:** Infections by herpesviruses are common phenomena in patients being treated for chronic leukemia and those undergoing bone marrow transplantation. Reactivation of endogenous latent virus caused by the immunosuppressive and cytotoxic effects of cytoreductive therapies is a common mechanism of infection. With HTLV-1 acquisition of exogenous virus by transfusion of blood products containing virus and from the bone marrow graft in the case of bone marrow transplantation can occur.

**Conclusion:** With HTLV-1 acquisition of exogenous virus by transfusion of blood products containing virus and from the bone marrow graft in the case of bone marrow transplantation can occur.

**Keywords:** Human T-lymphotropic Virus, Herpesvirus, ABC, MDR

# P362 - 233: SCREENING, ISOLATION AND MOLECULAR IDENTIFICATION OF BIODEGRADING MYCOBACTERIA FROM IRANIAN ECOSYSTEMS AND ANALYSIS OF THEIR BIOREMEDIATION CAPABILITY.

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**Background and Aim:** Anthropogenic origin pollutants including pesticides, heavy metals, pharmaceuticals and industry chemicals impose many risks to human health and environment and bioremediation has been considered the strategy of choice to reduce the risk of hazardous chemicals. In the current study, we aimed to screen and characterize mycobacteria from the diverse range of Iranian aquatic and terrestrial ecosystems with harsh and unfavorable environmental conditions that can be utilized for biodegradation of target pollutants.

**Methods:** Mycobacteria were isolated from a collection of 90 environmental samples and identified to the species level using conventional microbiological and molecular methods including the PCR amplification of hsp65 and sequence analysis of, 16S rRNA genetic markers. The growth rate of the isolates in presence of pollutants, chromatography, Gibbs and turbidometric methods were used to assess their biodegradation activity.

**Results:** A total of 39 mycobacterial isolates (43.3%) were recovered from 90 samples that belonged to 21 various species consisting of M. fortuitum; 6 isolates, M. flavescens and M.paragordonae; 4 isolates each, M. monacense, M.fredriksbergense and M.aurum; 2isolates each, 7single isolates of M.conceptionense, M. porcinum, M.simiae, M.celeriflavum, M.novocastrense, M.neoaurum, M.obuense and 12 isolates that belonged to 8 unknown potentially novel mycobacterial species. The isolates were categorized in three groups based on their bioremediation activity, i.e., 5(12.8%) organisms without biodegradation activity, 20(51.2%) organisms with previously reported biodegradation activity, and 14 (35.9%) organisms that showed biodegradation activity but not previously reported.

**Conclusion:** Our results showed that the Iranian ecosystems harbor a good reservoir of diverse mycobacterial species with biodegrading potentiality for neutralizing environmental chemical pollutants.

**Keywords:** Mycobacterium, Bioremediation, 16S rRNA sequencing, phylogeny

# P363 - 236: PREVALENCE OF VARICELLA ZOSTER VIRUS IN PATIENTS WITH STROKE AND ITS COMPARISON WITH A CONTROL GROUP BY PCR

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**Background and Aim:** Varicella Zoster virus (VZV) causes a broad range of pathologies in the human central nervous system (CNS) such as stroke. It was proposed that there is an association between VZV infection and stroke with distinct results reported by the researchers using distinct methods. This perusal aimed to inquire the frequency of Varicella Zoster virus among stroke patient and control groups.

**Methods:** We detected VZV in 28 stroke patients and 28 controls blood samples that were collected from Northern areas of Iran. Then DNA was extracted from them and the infection with VZV was inquired by PCR technique. Analysis the result based on the Chi square test and SPSS software.

**Results:** The results acquired by this study showed that 7(25%) out of 28 in patients were infected by VZV, while no samples of control group infected by this virus.

**Conclusion:** In our study that analysis based on the Chi square test and SPSS software, statistical analysis represents a significant association between the frequency of VZV and stroke, some other studies have been succeeded to show the significant association between VZV and stroke too. However further studies are needed to confirm and show the role of VZV in stroke patients.

**Keywords:** Stroke, Varicella Zoster virus, PCR

# P364 - 255: MOLECULAR DETECTION OF STAPHYLOCOCCUS AUREUS ENTEROTOXINS B USING LOOP-MEDIATED ISOTHERMAL AMPLIFICATION

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**Background and Aim:** Enterotoxins B of Staphylococcus aureus (SEB) is virulence factor in poisonous of this bacteria that highly resistant against heat and pasteurization. Therefore, rapid detection of SEB is very important. The goal of this work is molecular detection of SEB in genome of S. aureus using loop-mediated isothermal amplification (LAMP).

**Methods:** In this study, the Primer explorer v4 software was used for designing specific primers. After culturing of S. aureus, DNA genomic was extracted. LAMP reaction contains Bst buffer, dNTP, Betaine, FIP and BIP ( inner primers ), F3 and B3 ( outer primers ), MgSO4 and DNA template. The reaction mixture during the initial denaturation at 94 ° C for 5 minutes in a heating block was placed, then the Bst DNA polymerase (4 units) was added and the reaction mixture was incubated for 90 minutes at 65 ° C. Then LAMP products were analyzed by 2% agarose gel electrophoresis and SYBR Green.

**Results:** The results showed that amplification of DNA was carried out in positive control according to ladder-shaped smears in agarose gel electrophoresis and SYBR Green visual.

**Conclusion:** Rapid amplification, simple operation, no need a thermocycler, low cost and easy detection is advantages of LAMP assay than other molecular methods for detection of SEB.

**Keywords:** Staphylococcus aureus, Enterotoxins B, Detection, LAMP

# P365 - 279: DETECTION AND GENETIC CCHARACTERIZATION OF NOROVIRUSES GENOGROUP II IN CHILDREN LESS THAN 5 YEARS OF AGE HOSPITALIZED WITH AACUTE GGASTROENTERITIS IN TEHRAN, IRAN

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**Background and Aim:** Noroviruses (NoVs) are a leading cause of non-bacterial acute gastroenteritis outbreaks across all age groups and affect people of closed settings. NoV genus is classified into seven genogroups (GI to GVII), of which GII as the predominant genogroup is responsible for disease in humans. NoV genogroups are further subdivided into over 40 genotypes, of which GII.4 genotype is the most common genotype in NoV outbreaks worldwide.

**Methods:** A total of 210 stool specimens (male=118 and female=92) were collected from children less than 5 years old who hospitalized for acute gastroenteritis from June 2015 to June 2016. Real-time RT-PCR was used to screen NoVs GII using NoV GII specific primer pair and probe. Genotype characterization on NoV GII positive specimens was carried out by semi-nested RT-PCR targeting the capsid region of NoV GII.

**Results:** NoV GII was identified in 36 (17.1%) out of 210 specimens by Real-time RT-PCR and verified by RT-PCR using NoV GII specific primers. Of a total of 36 positive samples, 15 samples were randomly selected for genetic analysis. Most samples (86.6%) belong to GII.4 and the remaining were GII.3 (6.7%) and GII.12 (6.7%). Interestingly, GII.12 had not been previously reported in Iran.

**Conclusion:** Our results indicated that NoV GII.4 was dominant circulating genotype and must be considered as one of the infectious causes of acute gastroenteritis among Iranian children. However, other genotypes could be detected sporadically.

**Keywords:** Norovirus, Acute gastroenteritis, genotyping

# P366 - 280: DETECTION OF UREAPLASMA UREALYTICUM IN CLINICAL SEMEN SAMPLES OF INFERTILE MEN BY USING MOLECULAR METHOD

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**Background and Aim:** According to the importance and the need to address the issue of infertility and also lack of public awareness about the consequences of genital and urinary tract infection, detection of Ureaplasma urealyticum was done in semen of infertile men by using PCR method. Recently, due to environmental conditions, significant growth in infertility has seen in Iran. The evidence shows that the infection without clinical symptoms associated with this bacterium may cause malfunction of the sexual glands, and presence of this bacteria in semen causes a drop in the fertility rate.

**Methods:** In this study, samples were collected from a total of 100 infertile men who referred to Sarem Hospital. Each sample was divided in two parts: First part was tested by semen analysis and the second part was tested by PCR method. DNA was extracted by using phenol-chloroform method. The PCR test was done for detection of Ureaplasma urealyticum.

**Results:** From a total of 100 semen samples, 16 cases (16%) were positive for Ureaplasma urealyticum. These samples with positive results, also had leukocyte level more than normal level (0-1 Mil/ml) and low motility from their spermogram test.

**Conclusion:** Due to the dangerous consequences of this infection, screening infertile couples with no clinical symptoms and starting antimicrobial therapy is necessary. So, using PCR method is introduced as a useful, fast and reliable technique to identify Ureaplasma urealyticum. In the absence of programs for diagnosis, prevention, and treatment, the bacterial infections remain continues, and lead to serious consequences such as infertility.

**Keywords:** Ureaplasma urealyticum, Infertile men, Semen, Molecular Method

# P367 - 281: MOLECULAR DETECTION AND TYPING OF ACINETOBACTER BAUMANNII ISOLATED FROM CLINICAL SETTINGS OF IRAN, TEHRAN

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**Background and Aim:** The Gram-negative coccobacillus Acinetobacter baumannii as an important nosocomial pathogen has emerged a global health concern in recent years. Resistance to a broad range of antimicrobial agents (MDR), the tendency for epidemic spread and long-term persistence in the hospital setting, and hand transmission by health care staff make A. baumannii as a common yet difficult-to-treat pathogen. Three epidemic lineages are responsible for the majority of A.baumannii infections in clinical settings worldwide. Few reports have been published the epidemiology of nosocomial A.baumannii infection in Iran and a systematic survey of the hospital epidemiology and drug resistance of A. baumannii is not yet available on a national scale. The aim of this project is to investigate the molecular epidemiology of the A. baumannii isolates.

**Methods:** All isolates were typed by RAPD analysis with the DAF4 primer. DNA Banding patterns were analyzed by GelCompare II software version 4.0 (Applied Maths, Sint-Matens-latem, Belgium). Clustering was calculated at 80% similarity cut-off and characterized by the UPGMA (unweighted pair group method with arithmetic averages).

**Results:** The number of 7-10 DNA fragments was detected in gel electrophoresis of RAPD-PCR products. The size of bands differed from 0.1 to 2.5 kb. Among 57 A. baumannii strains, 14 different RAPD-PCR patterns were found at 80% similarity cut-off.

**Conclusion:** RAPD-PCR method can detect divergent strains of successful clonal lineages.

**Keywords:** Acinetobacter baumannii, RAPD PCR, Molecular Epidemiology

# P368 - 318: PREVALENCE OF URINARY TRACT INFECTIONS AND ITS CAUSATIVE AGENTS IN IMAM REZA HOSPITAL, BOJNURD, AT SUMMER AND AUTUMN 1395

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**Background and Aim:** Bacterial infections are the most common infectious diseases in the urinary system and are able to engage the upper and lower urinary tract. Given the importance of urinary tract infections in this study the prevalence of and factors involved in urinary tract infection in Imam Reza Hospital were evaluated.

**Methods:** Culture of urine samples received at the laboratory of Imam Reza Hospital was performed to determine the bacterial species. Isolates were identified using conventional biochemical tests.

**Results:** In the summer and autumn of 1395 a total of 2763 urine culture were performed, of which between 307 (11/1%) were positive. Of the positive cases 73/6% Escherichia coli, 8/14% of enterococci, 7/16% Streptococcus viridans, 3/58% of Pseudomonas aeruginosa, 1/95% Staphylococcus epidermidis, 1/95% Enterobacter aerogenes, 1/95% Proteus mirabilis, 0/98 Klebsiella species and 0/65% Staphylococcus aureus were isolated.

**Conclusion:** The results indicated that the overall rate of positive urine culture is lower than previous studies and E. coli is the leader agent.The relatively low percentage of cases with Proteus, Enterobacter and Klebsiella, in comparison with gram-positive bacteria, including Enterococci, Streptococci and Staphylococcus epidermidis shows the evolution of the common causes of urinary tract infections.

**Keywords:** Urinary tract infection, culture, Escherichia coli

# P369 - 324: DETECTION OF VIBRIO CHOLERAE O1 USING LOOP-MEDIATED ISOTHERMAL AMPLIFICATION

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**Background and Aim:** Cholera is an acute gastrointestinal disease caused by Vibrio cholerae. V. cholera is a water and foodborne pathogen, that cholera outbreaks are causing serious damage to human health. There are many techniques for V. cholerae detection, these techniques including culture and molecular methods such as PCR, real-time PCR, multiplex PCR, NASBA, but these techniques are time-consuming and require expensive equipment. The aim of this work is detection of V. cholerae O1 using loop-mediated isothermal amplification.

**Methods:** For this, Zot(Zonula occludens toxin) was selected for detection and specific primers were designed with utilization of Primer Explorer v4 software. The reaction mixture contains Bst buffer, dNTP, Betaine, FIP and BIP(inner primers), F3 and B3 (outer primers), Mgso4, template DNA. The reaction mixture during the initial denaturation at 94°C for 5 minutes in a heating block was placed, then the Bst DNA polymerase was added and the reaction mixture was incubated for 90 minutes at 65°C. Then LAMP products were analyzed with electrophoresis in 2% agarose gel.

**Results:** Agarose gel electrophoresis to examine the positive control of DNA amplification is a ladder-shaped smears and negative control samples genome lacks a primer dimer is observed.

**Conclusion:** The LAMP method was providing a sensitive and rapid diagnostic assay for detection V. cholerae O1 without the need for expensive device.

**Keywords:** Vibrio cholerae O1, LAMP, Detection, Zot gene

# P370 - 326: PREVALENCE AND GENOTYPING OF METHICILLIN-RESISTANT AND SUSCEPTIBLE STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM PATIENTS OF A UNIVERSITY HOSPITAL OF ISFAHAN CITY, IRAN

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**Background and Aim:** Staphylococcus aureus is one of the major causes of community and hospital-acquired infections with the methicillin-resistant strains having the highest morbidity and mortality. In our previous work the isolates of the present study were assessed using MLST and their ST's were determined and documented in the corresponding database. In the current study, the isolates were subjected to genotyping with coagulase typing, Sccmec and agr typing methods.

**Methods:** PCR for mecA gene, Sccmec typing and finally PCR-RFLP for coagulase gene using alul enzyme was performed for all 54 isolates. MLST of these isolates showed the majority of MRSA isolates were belongs to ST239.

**Results:** Phenotypic and genotypic tests revealed that 21% of isolates were MRSA. PCR-RFLP test for coagulase gene showed MRSA isolates to have similar patterns. The majority of the isolates were community-acquired and belonged to Sccmec type IV whereas the remaining was hospital-acquired and of types I (22.2%) and type III (2.2%).

**Conclusion:** Most of the isolates belonged to agr type I and other respectively II and III. Agar dilution method has higher sensitivity and specificity compared to that of disk diffusion method. The majority of the isolates were community-acquired and belonged to Sccmec type IV and agrI, whereas the remaining were hospital-acquired and of types I (22.2%) and type III (2.2%) and agrI again.

**Keywords:** MRSA, MSSA, Molecular Characterization

# P371 - 332: RAPID DETECTION OF MORGANELLA MORGANII BY A DNA-BASED POINT-OF-CARE ISOTHERMAL AMPLIFICATION METHOD

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**Background and Aim:** Gram-negative facultative anaerobic bacilli Morganella morganii is considered as an opportunistic pathogen that mostly causes nosocomial infections. Isothermal amplification methods are rapid point-of-care approaches for detection of microorganisms without sophistication of non-isothermal methods. They hardly need experienced hands-on or expensive materials and equipment. In this study, we aim to differentiate the pathogen both sensitively and specifically by DNA-based loop mediated isothermal amplification method.

**Methods:** Pre-enrichment of the bacterium M. morganii was made prior to detection. The samples were heated in 100 0C and centrifuged to extract genomic DNA. The supernatant containing DNA template was used for the amplification procedure. Six specific LAMP primers was designed to amplify the target DNA at 60 0C in one hour. Agarose gel electrophoresis was utilized for investigation of the amplicon where a ladder like pattern compromising various sizes of amplicons was considered as positive detection.

**Results:** The concentrations of extracted genomic DNAs were around 170 ng/µl. Primers targeted the "MU9_RS00145" gene which is only found in M. morganii. Six target region were successfully amplified by LAMP which distinguished 8 different bacteria named Shigella, Pseudomonas, Salmonella, Citrobacter, Serratia, Kelebsiella, Yersinia and Entrobacter from M. morganii.

**Conclusion:** Isothermal amplification methods e.g. LAMP could be used as a specific, sensitive, rapid, affordable and feasible method to recognize pathogens e.g. M. morganii. It also could make us able to diagnose the disease reasons at the point-of-care in a rapid and sensitive way which seems necessary to choose the best treatment approaches.

**Keywords:** Morganella morganii, molecular detection, opportunistic pathogen, isothermal amplification method

# P372 - 333: ISOLATION AND MOLECULAR IDENTIFICATION OF A COLD-ADAPTED YEAST, RHODOTORULA MUCILAGINOSA SP. GUMS16 FROM GUILAN, NORTH OF IRAN

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**Background and Aim:** Cold-adapted yeasts can be isolated from different environments, such as glacial ice cores and deep-sea sediment. Some species isolated from these cold habitats only grow at cold temperatures, while others can tolerate mesophilic temperatures as well.

**Methods:** In this study, a cold-adapted yeast was isolated from fallen leaf debris in Deylaman Forest, Guilan, North of Iran. The strain with orange colonies was able to grow in PDA medium at 30 °C and 4 °C respectively, after 24h and 72h. After growth of the stain in PDB medium, genomic DNA extracted using a modified new method. ITS1-5.8S-ITS2 rRNA region was amplified using the universal primers ITS1 and ITS4. The amplicons were sequenced with ITS1 and ITS4 universal primers and the sequence was submitted to the GeneBank under accession number MF289167.1.

**Results:** Preliminarily identification was obtained using the basic local alignment search tool (BLAST). Sequence alignment was generated using the software Mega v6.0 with sequences of the 5.8-ITS rRNA region from Rhodotorula species already reported in the GenBank database. BLAST analysis showed values of 100% identity with the ITS sequence of Rhodotorula sp. EY12114.

**Conclusion:** This study represents the first report regarding isolation and molecular identification of a cold-adapted yeast from Guilan, North of Iran. Rhodotorula mucilaginosa sp. GUMS16 can be evaluated for its biotechnological potentials such as the production of enzymes for industrial applications that need high enzyme activities at low temperatures, bioremediation purposes and carotenoid production.

**Keywords:** Cold-adapted yeast, Rhodotorula mucilaginosa, BLAST, bioremediation, carotenoid

# P373 - 338: ANALYSIS OF HPV 16 E6 SEQUENCE VARIATIONS IN IRANIAN PATIENTS WITH CERVICAL CARCINOMA

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**Background and Aim:** Human papillomavirus type 16 has several intratype variants with different geographical locations and ethnicity of each population. The E6 protein of the human papillomavirus type 16 is constitutively expressed in cancer cells; therefore E6 is an effective vaccine candidate. Our aim was to appraise the E6 gene mutability among Iranian patients.

**Methods:** A total of 166 cervical samples from HPV-infected women were obtained. DNA of HPV16 positive isolates was evaluated through the amplifying the E6 gene using type-specific primers PCR, TA-cloning, and direct sequencing.

**Results:** The result of PCR showed that 163 (98.19%) cases were positive for HPV infection. HPV 16 was detected in 79 (48.46%) cases. Examination of E6 gene showed the most types of nucleotide variation in our patients were T213G, C253T, T268G, and A360C, leading to the non-synonymous amino acid variation D71E, H85Y, L90V, and E120D, respectively. We observed for the first time, a novel E6 gene mutation G50T (11.39%) among the HPV16-positive women.

**Conclusion:** To the best of our knowledge, this is the first study describing nucleotide variants and evolutionary pressure acting on E6 regions of HPV16 genomes from the Iranian population. These data suggest that the high frequency of HPV16 E6 variants could be important in making more efficacious DNA vaccine for tumor protection.

**Keywords:** Human papillomaviruses, HPV16, E6 gene, sequence variation

# P374 - 339: GENOTYPING OF MULTIDRUG-RESISTANT STRAINS OF PSEUDOMONAS AERUGINOSA ISOLATED FROM BURN

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**Background and Aim:** Pseudomonas aeruginosa is one of the most common causes of nosocomial infections which affects mainly immunocompromised hospitalized patients, and in particular, is the leading cause of life threatening infections in patients in burn units.The clinical importance of P. aeruginosa is mostly related to its high resistance against antimicrobial drugs, and in addition to its intrinsic resistance to antibiotics, becomes quickly resistant against the drugs during the treatment.To determine the genetic diversity of MDR P. aeruginosa strains isolated from burn and wound infections in Ahvaz, Iran, by ERIC-PCR.

**Methods:** From total 99 strains of P. aeruginosa defined as MDR by using drug susceptibility testing, 66 were subjected to ERICPCR analysis, comprises 53 strains isolated from burn infection, and 13 randomly selected strains from wound infection with higher resistance to combinations of more numbers of drugs.

**Results:** Eight clusters (I to VIII), and 50 single clones were generated for tested MDR isolates analyzed by ERIC-PCR. The high heterogeneity was observed among the isolates from burn infections including 16 isolates which were categorized in eight clusters and 37 single clones. The isolates in clusters II, III, VI, VIII showed 100% similarity.

**Conclusion:** The high level of genotypic heterogeneity in P. aeruginosa strains demonstrated no genetic correlation between them. Extremely high drug resistance in isolates from burn, suggests that efficient control measures and proper antibiotic policy should be observed.

**Keywords:** Drug Resistance, Microbial, Polymerase Chain Reaction, Genotyping Techniques, Pseudomonas aeruginosa

# P375 - 346: THE USE OF FINE JLBRG TO IMPROVE HUMAN LIFE

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**Background and Aim:** Microalgaes important biological resources that a wide range of applications in biotechnology have been allocated. The extraordinary natural microalgae nutritional sources that can be used in food production. Microalgae photosynthetic microorganisms are easily and cheaply reproduced and develop their capabilities. Of biomass to produce a variety of species in human food, animal feed and other items used. In this study, such as microalgae edible, uses microalgae to produce biofuels, the use of microalgae for food fortification, fatty acids and food microalgae, metabolites of microalgae and the use of microalgae in wastewater.

**Methods:** Microalgae photosynthetic microorganisms are easily and cheaply reproduced.

**Results:** Microalgae.

**Conclusion:** Microalgae photosynthetic microorganisms are easily and cheaply reproduced and develop their capabilities. Of biomass to produce a variety of species in human food, animal feed and other uses. Among the known species of microalgae Chlorella vulgaris algae Spirulina platensis Ryzjlbkhay food and no side effects are common. Pattern of amino acids, carbohydrates and Asydchrbhay in the microalgae are highly compatible with other food. Animal cells are not able to biosynthesis of unsaturated fatty acids, whereas the cells of plants, including phytoplankton (microalgae) can produce full series of unsaturated fatty acids. A large number of extracellular products microalgae extract or antimicrobial activity, although the nature of the structure and many of them are not yet known active compounds. Recently, extensive research on the use of microalgae to produce biofuels-only resources on a large scale has been done. Research has shown that microalgae-addition to its high nutritional value, also are good sources for biofuel production.

**Keywords:** Spirulina platensis, microalgae, Chlorella vulgaris

# P376 - 354: INVESTIGATION OF VARIABLES IN CHLAMYDIAL CERVICITIS AMONG HOUSEWIVES IN KARAJ CITY

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**Background and Aim:** Sexually transmitted diseases (STD), are the most prevalent infectious diseases and Chlamydia is the most common infectious agent that causes STD, which is related to a wide range spectrum of diseases and long-term complications, such as cervicitis, infertility, and ectopic pregnancy.

**Methods:** In this cross-sectional research, 100 endocervical samples from cervisitis patients who were hospitalized at female hospital in karaj city . Nested PCR was performed and also in the interview with the patient, their information were recorded including age, socio-economic level, number of partner, and other variables. The results of questionnaire were analyzed by SPSS.

**Results:** Out of 100 samples, 55 (55%) samples were Chlamydia trachomatis positive. And the most positive cases were seen among people with low education, married, housekeeper with sexual activity who used one of the contraception methods.

**Conclusion:** Our results showed that the prevalence of STD results from C.trachomatis among the target population was higher than other countries .There was a significant relationship between the type of discharge and Chlamydia trachomatis, which contradicted the results of most studies carried out in other countries in the world. In general, the prevalence of Chlamydia trachomatis like other causes of sexually transmitted diseases depend on the level of awareness of females in the ages of the peak of sexual activity, Therefore, the frequency observed in this study emphasizes the importance of screening programs in Iran.

**Keywords:** Chlamydia trachomatis, cervicitis

# P377 - 357: PHENOTYPIC CHARACTERIZATION OF VIRULENCE FACTORS IN KLEBSIELLA PNEUMONIAE ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTIONS IN IRAN

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**Background and Aim:** Urinary tract infection (UTIs) caused by Klebsiella pneumoniae strains is one of the important bacterial infections in the world. Klebsiella pneumonia strains have numerous virulence factors that show important roles in pathogenesis of these strains in UTIs. There are little studies about pathogenesis of K. pneumoniae strains isolated from UTI patients in Iran. Thus, the aim of this study was to investigate the phenotypic virulence factors in K. pneumonia isolated from UTI patients in Iran.

**Methods:** Totally, 100 Klebsiella pneumoniae isolates were collected from patients with different clinical symptoms of UTI in hospitals from Tehran and Hamedan provinces, Iran and screened for biofilm and α-hemolysin production, mannose –sensitive (MSHA) and mannose –resistance hemagglutination (MRHA).

**Results:** Of the 100 K. pneumoniae isolates tested, biofilm and hemolysin formation was seen in 100% and 95% isolates, respectively. Moreover, 98% isolates showed the presence of f1 (MSHA) and P fimbriae (MRHA), respectively.

**Conclusion:** In conclusion, the present study provides information relevant to the virulence characteristics of K. pneumoniae isolated from UTI patients. The phenotypic virulence properties including the fimbriae f1 expression, biofilm and hemolysin formation and hemagglutination production were found in almost all of our isolates. This shows the highly virulence of K. pneumoniae isolated from UTI patients from Iran.

**Keywords:** Urinary tract infection, Virulence factors, Biofilm, Hemagglutination, K. pneumonia, Hemolysin

# P378 - 360: EPIDEMIOLOGY OF PULMONARY TUBERCULOSIS IN AHAR, NORTH WEST OF IRAN

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**Background and Aim:** According to the reports from WHO, almost one-third of the world's population was infected with Mycobacterium tuberculosis and is in the risk of active tuberculosis.This study aimed to determine the epidemiology of TB in the city of Ahar, North West of Iran.

**Methods:** The study population included patients from tuberculosis devotion of Ahar in 1385 to 1395. Pulmonary tuberculosis were diagnosed based on sputum smear positive as a standard protocols. The required data was collected from the Department of Tabriz University of Medical Sciences and tuberculosis devotion of Ahar.

**Results:** Twelve cases in one hundred thousand cases in 1389 were the highest rate of sputum smear-positive pulmonary tuberculosis. Furthermore, the lowest were, two in a hundred thousand people in 1393. Total of 139 cases included in the study witch 93 of them was women. Moreover, included patient ranged 1-90 years old with mean age of 43.3 ±20.1 year. In addition, of the included patients 59.7 % were from urban regions. The highest clinical features were, coughing, shortness of breath, loss of appetite, weight loss, sweating, fatigue, fever, bloody sputum and chest pain.

**Conclusion:** The success of TB control programs in the community requires the active participation of the medical community of the country. The main objective screening program for tuberculosis control and the responsibility for this important issue is the responsibility of doctors at different levels after diagnosis and proper treatment of TB patients is another important point. In addition to early detection and proper treatment, the fundamental point about the nobility comprehensive TB control epidemiology situation of tuberculosis in the community.

**Keywords:** Smear positive, epidemiology, Ahar

# P379 - 363: DETECTION OF RESISTANT GENES EXTENDED SPECTRUM BETA LACTAMASES (ESBL) IN ESCHERICHIA COLI FROM PATIENTS WITH URINARY TRACT INFECTION

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**Background and Aim:** Today, the chosen antibiotic for the empirical treatment of UTI is being discussed since 20 to 50 percent of strains of E. coli have become resistant to antibiotics of first-line therapy, even in developed countries. Considering the growing increase in various types of ESBL enzymes and their different effects on various types of antibiotics, precise determination of various types of ESBL enzymes, such as TEM, SHV and CYX-M, has a great importance. An Investigation of the antibiotic resistance pattern steadily, should also be done in each area in order to use a more suitable drug to treat patients based on it and if a change occurs in resistance pattern, good enough decisions should be taken in order to stop the development of the resistance.

**Methods:** In this study, 45 E. coli strains, separately extracted from urine samples, were investigated at Ghaem hospital for the 1393-94 years. After biochemical examinations the presence of bla_CTX_M , bla TEM and bla SHV genes was evaluated using specific multiplex polymerase chain reaction (PCR) primers.

**Results:** The results of Multiplex PCR obtained from forty-five samples are as follows: Gene bla TEM in 45 (100%), gene bla CTX_M in 45 (100%) and gene bla SHV was detected in 2 (4.4%) of samples, respectively.

**Conclusion:** Therefore accurate medical care as well as the use of appropriate antibiotics is required to prevent the outbreak of ESBL Producing E. coli strains.

**Keywords:** Escherichia coli, Extended spectrum beta lactamase (ESBL), Multiplex PCR

# P380 - 380: APPLICATION OF LOOP MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) TECHNIQUE IN THE DETECTION OF PARASITES: A SYSTEMATIC REVIEW

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**Background and Aim:** LAMP is a new DNA amplification technique, which due to its simplicity, accuracy, and low cost could provide very advantages. The LAMP technique has recently been applied in detection of human diseases. The aim of this study was to review the work have been done during the past fourteen years for detection the parasitic infections by these technique.

**Methods:** Scientific databases including MEDLINE, EMBASE, and the Cochrane library from 2003 up to 2017 and keywords including LAMP, parasite and diagnosis were searched. Totally, 180 articles were found. Finally, 117 articles were included in the research topic.

**Results:** Parasites that have been diagnosed by this technique are as follows: Entamoeba histolytica, Plasmodium vivax, Plasmodium falciparum, Plasmodium ovale, Plasmodium knowlesi, Plasmodium berghei, Leishmania donovani, Leishmania infantum, Leishmania major, Wuchereria bancrofti, Brugia malayi, Onchocerca volvulus, Echinococcus granulosus, Toxoplasma gondii, Strongyloides stercoralis, Dirofilaria repens, Dirofilaria immitis, Trichomonas vaginalis, Isospora suis, Babesia spp., Schistosoma mansoni, Schistosoma haematobium, Necator americanus, Eimeria spp. , Theileria spp. , Trypanosoma gambiense,Trypanosoma rhodesiense , Haemonchus contortus, Trypanosoma evansi, Trypanosoma lewisi, Trypanosoma cruzi, Trypanosoma congolense, Opisthorchis viverrini, Loa loa, Taenia solium ,Taenia saginata,Taenia asiatica, Clonorchis sinensis, Cryptosporidium spp., Giardia lamblia, Trichomonas fetus, Angiostrongylus cantonensis, Enterocytozoon hepatopenaei, myxobolus cerebralis.

**Conclusion:** The data showed that this method was used to detect many parasites. This method can also be developed for other parasites. LAMP technique allows the amplification of a few copies of target DNA under a constant temperature by self-recurring strand displacement DNA synthesis using only a simple water bath or a heating block.

**Keywords:** LAMP, parasites, diagnosis

# P381 - 396: DESIGNING A NEW PRIMERS FOR DETECTION OF CHLAMYDIA TRACHOMATIS OMPA GENE

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**Background and Aim:** Chlamydia trachomatis leads to genital infections among wemon, is the most common sexually transmitted infections agent. The majority of Chlamydia infections often have no symptoms.Hence,detection of this bacteria is vital. C. trachomatis need the sensitive and reliable laboratory methods because of asymptomatic nature of the disease and the increasing spectrum of infections. The traditional diagnosis methods have numerous limitations which contain low sensitivity, long testing time and high cost. Thus, tests based on the direct recognition of DNA via Real time PCR recommended.

**Methods:** According to updated sequences which submitted in GenBank,NCBI, more than 400 ompA sequences of C. trachomatis were aligned by using MEGA6 software. Then, two conserved regions were selected and specific primers designed. For confirming the designed primers, bioinformatics analysis was performed including physico-chemical properties by Gene runner and allele ID, specificity by BLAST and Primer3 software.

**Results:** Physico-chemical properties were showed perfect characteristic and BLAST analysis confirmed 96% homology with reference sequences of ompA genes.

**Conclusion:** These primers have perfect potential to use in real time PCR and are suitable for diagnostic methods.

**Keywords:** Chlamydia trachomatis, Real time PCR, MEGA6, BLAST, primer

# P382 - 401: MOLECULAR DIAGNOSIS OF CYTOMEGALOVIRUS IN SEMEN OF INFERTILIE MEN BY PCR

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**Background and Aim:** Infertility is a widespread problem all around the world.There are many causes for this condition such as: sperm production problems, blockage of sperm transport, sexual problems. Although many studies have demonstrated that the presence of some microorganisms in the human urogenital tract plays an important role. Several infection agents including human immunodeficiency virus, hepatitis B virus, Chlamydia trachoma is and cytomegalovirus, maybe present in semen and their transmissions. The main purpose of this research is to evaluate the performance of polymerase chain reaction technique to detection CMV in semen of infertile males.

**Methods:** This study was held on about 100 semen samples that have been collected from Tehran's saram Hospital. The DNAs were extracted by DNG-plus method. PCR test for CMV was optimized. Limit of detection (LOD) and specificity test were done too.

**Results:** Cytomegalovirus (257) amplicons was observed in 1.5% agarose gel electrophoresis. The specificity of the primers did with 6 other microorganism DNAs. These primers showed a specificity of 100%. The limit of detection of PCR for CMV was 100 copy/reaction. 7% of samples were positive by PCR Test.

**Conclusion:** Viral infections can infect sperm and are considered risk factors in male infertility. Growing evidences show that CMV might play a major role in male infertility. The present investigation was held to study the detection rate of CMV in semen of males with infertility and to evaluate the impact of virus infection on the major parameters of sperm.PCR should be used for direct and rapid identification of CMV in semen samples.

**Keywords:** Semen, infertility, cytomegalovirus, PCR, Detection

# P383 - 408: FREQUENCY AND ANTIBIOTIC RESISTANCE PATTERNS OF ENTEROAGGREGATIVE ESCHERICHIA COLI ISOLATES FROM CHILDREN WITH DIARRHEA IN AHVAZ

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**Background and Aim:** Enteroaggregative Escherichia coli (EAEC) is an important agent of diarrhea and is increasingly recognized as a global emerging pathogen, with potential threat to public health. EAEC cause acute and persistent diarrhea, mainly in children in both developing and developed countries and have been identified as the cause of several outbreaks worldwide. The objectives of present study were to determine the frequency of EAEC by molecular methods and detection antibiotic resistance profiles.

**Methods:** A total of 150 strains of E.coli isolated from children with diarrhea under 10 years were examined. These specimens collected from two educational hospitals from April to November 2015 in Ahvaz. All isolates were identified by standard biochemical tests as E.coli. Total DNA was isolated by boiling method. Determination of EAEC isolates was performed using multiplex-PCR for presence of pCVD432 and aggR genes. Susceptibility testing were assessed by Kirby-Bauer method based on CLSI Guidelines 2016 to following antibacterial agents: imipenem, meropenem, ceftazidime, cefotaxime, ceftriaxone, ciprofloxacin, ampicillin, amikacin, gentamicin, tetracycline and colistin.

**Results:** Out of these isolates, EAEC were detected in 14 (9.3%) children by PCR, which harbored both pCVD432 and aggR genes. The highest resistance was determined to Ampicillin (100 %) followed by cefotaxime and ceftriaxone (61.5%), whereas high rates of susceptibility was observed to colistin, imipenem, meropenem (100%).

**Conclusion:** The results of current study showed that the rate of infection by diarrheagenic EAEC was relatively high in children and showed high resistance rates against commonly used antibiotics in our region that should be more considered in diagnosis and treatment strategies.

**Keywords:** Enteroaggregative Escherichia coli (EAEC), Diarrhea, PCR, Antibiotic resistance

# P384 - 409: UPDATE ON THE EPIDEMIOLOGY AND CIRCULATING GENOTYPES OF ROTAVIRUS IN IRANIAN CHILDREN WITH SEVERE DIARRHEA; 1986-2015

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**Background and Aim:** Rotaviruses (RVs) are the most common cause of severe diarrhea in children <5 years of age worldwide with higher prevalence in developing countries. In the pre-RV vaccine era, it is important to provide precise information on RV prevalence, RV genotypes distribution and changing trends in circulating RV genotypes. In this context, the present review was conducted to update epidemiological data of RV, and estimated patterns and distribution of RV genotypes among Iranian children <5 years of age based on data from 1986 to 2015.

**Methods:** Data were obtained by searching the Medline, PubMed, and references from relevant articles using the terms “rotavirus” and “Iran” in combination with “genotype”, or “prevalence”. The selected works were restricted to studies relevant RV prevalence and genotypes. Studies presenting strain combinations G[P] were categorized by G or P genotypes, separately. Microsoft Office Excel and GraphPad Prism, Version 5 were used for statistical analyses.

**Results:** In Iran, average of RV positivity rate was 40.04% in all patients <5 years of age hospitalized for acute gastroenteritis (AGE). Considerably, studies have shown substantial increase in the RV detection rate over time from 1986 to 2013. Moreover, continued predominance G and P genotypes were G1 and P[8], although peak prevalence of the G1 genotype appeared to decline in 2007-2011 timespan compared to 2001-2006.

**Conclusion:** Accordingly, data presented in this review, which might indicate the changing pattern of RV genotypes in Iranian population, further highlights the important role of continuous monitoring of RV genotypes before starting any RV national vaccination.

**Keywords:** Rotavirus, Epidemiology, Genotype, Iran

# P385 - 432: DETECTION OF RESISTANT GENES ESBL IN ESCHERICHIA COLI ISOLATED FROM PATIENTS WITH URINARY TRACT INFECTION IN GHAEM AND EMAM REZA HOSPITALS IN MASHHAD

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**Background and Aim:** In addition to being resistant to penicillin, extended-spectrum beta-lactamase (ESBLs) are enzymes that mediate resistance to a wide range of third-generation cephalosporins such as ceftazidime, cefotaxime, ceftriaxone, etc. On the other hand, urinary tract infection (UTI) is one of the most common bacterial infections. The current study aims at tracking the ESBL resistance genes to E. coli strains in patients who suffer from UTIs.

**Methods:** A total of 60 E. coli isolates from urinary sample were obtained from hospitalized patients who were diagnosed with urinary tract infection in Ghaem and Emam Reza hospitals in years 95- 96 in Mashhad. After biochemical examination, the presence of bla CTX_M , bla TEM and SHV genes was evaluated using specific multiplex polymerase chain reaction (PCR) primers.

**Results:** Out of 60 sample, 60 (100%) had the TEM genes and CTX_M gene was detected in 60(100%) sample. The SHV gene was detected in 4(6.6%) sample. In this study, the rate of SHV gene is increased compared to previous studies.

**Conclusion:** According to the results of this study the production of ESBL was identified in 100% of the investigated E.coli isolates.

**Keywords:** Escherichia coli, Extended spectrum beta lactamase (ESBL), Multiplex PCR

# P386 - 459: PHYLOGENY OF MYCOPLASMA AGALACTIAE VACCINE STRAINS IN IRAN, A MOLECULAR STUDY BASED ON MULTILOCUS SEQUENCE TYPING

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**Background and Aim:** Mycoplasma agalctiae (Ma) is a principle agent in etiology of agalaxy. Iran remains a major world stronghold for agalaxy with numerous annual outbreaks. Three indigenous Ma strains of Lorestan, Taliqan and Shiraz are used in preparation of agalaxy vaccine at Razi institute.

**Methods:** In order to characterize genetic properties of these strains a MLST genotyping system consisting of five genes (dnaA ،gltX ،gyrB ، metS, tufA) based on guidelines recently developed (available at https://pubmlst.org/magalactiae/).

**Results:** In consequence, at dnaA, gltX,gyrB, metS and tufA loci of all the three strains alleles 1, 21, 2, 2 and 1 were identified, respectively. The gltX allele (21) was shown to be new with no previous record in the MLST database. A new sequence type (ST33) with close similarity to ST4.

**Conclusion:** Given the characteristics of the Iranian animal farming sector, we assume circulation of clonal complex or complexes of Ma is expectable.

**Keywords:** Mycoplasma agalactia, Agalaxy, MLST, Clonal complex, Sequence type

# P387 - 461: VNTR TYPING OF MYCOPLASMA AGALACTIAE VACCINE STRAIN USING A SIMPLIFIED MCAULIFFE PROCEDURE

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**Background and Aim:** Agalactia is a contagious disease of small ruminants which Mycoplasma agalactiae (Ma) is the main cause of the disease in sheep and goats. World Organization for Animal Health (OIE), is listed disease which is responsible for severe losses to dairy industry.

**Methods:** During the last decade, VNTR has been used for genotyping of several bacterial species including M. agalactiae. VNTR method also accomplished for simplify and make appropriate McAuliffe method to laboratory conditions in this country, on the genetic structure of M. agalactiae vaccine strains. Based on this protocol, four primer pairs was designed and a special PCR protocol was developed to enable simultaneous amplification of all the target loci by traditional thermocycler PCR machine.

**Results:** The effectiveness of our proposed protocol of this approach was approved by applying on Mycoplasma agalactiae vaccine strains.

**Conclusion:** According to the results, it is recommend using this modified protocol as an efficient method for diversity investigation clonal complex or complexes of M. agalactiae strains available in geographical regions in Iran.

**Keywords:** VNTR, agalactiae, genotyping, vaccine strains

# P388 - 472: MULTIPLEX DETECTION OF FOUR POTENTIALLY DEADLY PATHOGENS WITH SUSPENSION ARRAY TECHNOLOGY

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**Background and Aim:** Rapid and accurate detection and differentiation of emerging and reemerging pathogens with similar clinical symptoms is a vital part of outbreak management. Molecular multiplex tests have the potential to reduce the overall time required for detection of pathogens by parallelization of the test process. Suspension array technology is an accepted platform for the development of multiplex molecular assays. The aim of this study was to develop identification assay for four deadly infectious agents that result in similar signs and symptoms; based on suspension array technology after multiplex PCR.

**Methods:** Multiplex PCR reaction for simultaneous amplification of four target sequences from genomes of Zaire ebolavirus, Crimean-Congo virus, Plasmodium phalciparum, Salmonella typhi and human beta-actin as internal control were set up using a custom-synthesized template plasmid. Primers, either forward or reverse, were designed to be biotynilated at the 5'-end. Probes were coupled to the surface of the bead particles, and the tagged-PCR products were added to hybridize to the immobilized probes. After treatment with streptavidin-phycoerythrin, intensity of fluorescent signal was determined using flow cytometry. No-template PCR control was also included.

**Results:** Population of beads corresponding to each pathogen and beta-actin showed at least 4-fold increase in median fluorescent intensity after hybridization with relevant PCR product. None of the PCR products showed cross-reaction with the probes of other pathogens.

**Conclusion:** Suspension array technology is a reliable detection platform for development of multiplex molecular assay of dangerous and deadly pathogens along with internal control, and might be very helpful in managing the emerging and reemerging infectious outbreaks.

**Keywords:** Suspension array, multiplex assay, emerging and reemerging infections

# P389 - 491: THE E.COLI BL21(DE3) STRAIN FOR EXPRESSION OF RECOMBINANT PROTEIN (AGB8/2) OF ECHINOCOCCUS GRANULOSUS

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**Background and Aim:** Cystic echinococcosis is one of the most important parasitic zoonotic diseases that caused by metacestodes of the tapeworm Echinococcus granulosus. This infection brings great economic losses and disease burden in endemic region. The metacestode developes mostly in the liver and lungs of intermediate hosts which are primarily ungulates, but can also be in man. Hydatid cyst is detectable clinically through various imaging techniques and serological tests. However these techniques aren't efficient enough. Diagnostic methods of infection are progressing well, such as preparation of recombinant antigens for detection of antibody in the serum of patients. Thus the aims of this study were to produce highly antigenic recombinant protein and evaluated the expression of recombinant gene in E. coli BL21(DE3).

**Methods:** In this experimental study, AgB8/2 was subcloned into pET28b(+) plasmid. Then, the recombinant plasmid was extracted and confirmed by restriction digestion using Nde1 and Hind3. The cloning was confirmed with colony PCR method. Recombinant AgB8/2 was expressed in the E.coli BL21(DE3) with induction by IPTG, and expression of the protein was analyzed by SDS-PAGE.

**Results:** The presence of AgB8/2 gene fragment in the recombinant plasmid was confirmed by restriction digestion using Nde1/Hind3 enzymes. SDS-PAGE analysis showed the successful expression of the target gene.

**Conclusion:** The antigen B (AgB) is a major protein which is a component of the Echinococcus granulosus metacestode; its characteristics make it a candidate antigen for diagnosis. Results indicated that recombinant AgB8/2 protein (11KD) can be employed in serological test such as ELISA for diagnosis of hydatidosis.

**Keywords:** Echinococcus granulosus, diagnosis, recombinant antigen, E. coli BL21(DE3)

# P390 - 495: HELICOBACTER PYLORI SEROPREVALENCE IN THE URBAN POPULATION OF KERMAN, IRAN

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**Background and Aim:** Helicobacter pylori (H. pylori) infection is common worldwide and is the main pathogenic factor in peptic ulcer disease. It has also been associated in the development of gastric cancers. Prevalence of this infection varies in different population groups. We examined the prevalence of H. pylori infection in a population from the urban area of Kerman city of Iran.

**Methods:** A prospective epidemiologic survey of H. pylori infection was accomplished in an urban population of 659 individuals, ages 17 to 72 years, in Kerman city. A commercial H. Pylori IgG ELISA kit (Monobind, USA) was used for seroepidemiology, according to manufacturer's instruction.

**Results:** A total of 383 patients (58.1%) were positive for anti IgG H. pylori antibodies. Antibody prevalence increased progressively with the age. H. pylori infection was not significantly influenced by sex ($p > 0.05$).

**Conclusion:** The findings suggest a relative high prevalence of H. pylori infection that was related to several risk factors such as socioeconomic status and traditional living conditions. We conclude that the older patients showed a higher seroprevalence of H. pylori infection, in the age range from 51 to 72 years.

**Keywords:** Helicobacter pylori, Seroprevalence, Urban area, Kerman, ELISA

# P391 - 502: AIVS (H9N2 ,H5N1 AND H5N8 ) MONITORING IN ISFAHAN BIRDS GARDEN

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**Background and Aim:** Isfahan bird garden has included various expensive and unique birds of more than 165 specious from passerine to song and water fowls, this park is located on the beach of Zayandeh rood river with yearly more than 200000 visitor.

**Methods:** Last year when the H5N8 AIV were distributed in the country the monitoring for any AIV were done as a monthly monitoring of 5-6% of sensitive birds , therefore using a sterile siring , about 2 ml of blood of wing vein collected and transfer to lab for AIV titration, and swabs of pharynx and stools for RT-PCR . The technical methods were HI for H9N2 and RT-PCR for H5N1 and H5N8.

**Results:** The H9N2 titration were different in birds, but the highest titer (9-8) were related to chickens and peasant and fowl , the lowest titer(0-3) were related to water fowls such as Ducks, Pelicans ,Flamingos ,Gooses .The other birds has the titer from 4-6. In H5N1 and H5N8 monitoring, fortunately there were not any positive and RT-PCR.

**Conclusion:** This monitoring monthly is carried out and sanitization of garden and gates and with widely antiseptic material carried out daily.

**Keywords:** AIV, Birds, Isfahan

# P392 - 504: CAMPYLOBACTER COLI DETECTION AND EVALUATION OF GENETIC DIVERSITY OF A FRAGMENT OF A PARTICULAR GENE, IN BROILER CHICKENS IN KERMANSHAH CITY, BY HRM METHOD

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**Background and Aim:** Zoonoses diseases are the major problem in the health significance. Campylobacters are gram negative, spirale and motile, living as commensal in the gut of most poultries and domestic animals. Infections caused by campylobacters are one of the important causes of human bacterial gastroenteritis. Transmission of campylobacter infection is fecal-oral and is due to consumption of raw or unwellcooked meat particularly poultry meat. The cadF gene is expressed in all of c. jejuni and c. coli species and contributes in junction to the cellular matrix protein, fibronectin and it is considered as an important factor of pathogenesis. High resolution melt curve analysis or HRM is the method based on allelic differences through melt curve analysis. In this method, multiplication is performed by Real- time PCR.

**Methods:** Cloacal portions of 100 chickens were collected as samples from retail stores of Kermanshah city. After sample preparation and DNA extraction, they were subjected to HRM for evaluation of cadF gene presence. Then, their melting curves were compared with standard samples melting curves.

**Results:** On the base of the melting temperatures, 45 unknown samples were considered positive for campylobacter coli, but minor variations were seen in melting point temperatures of C. coli isolates that it can be the indicative of SNPs.

**Conclusion:** In the current study, a high-resolution melting analysis method was developed to investigate the polymorphism of cadF. To perform population genetic studies, a rapid and high-throughput screening method is necessary. High-resolution melting analysis is a rapid and accurate method, which is suitable for this type of studies.

**Keywords:** Campylobacter, cadF gene, Chicken

# P393 - 507: FREQUENCY OF SEROTYPES K1 AND K2 AMONG CLINICAL ISOLATES OF KLEBSIELLA PNEUMONIAE ISOLATED FROM EDUCATIONAL HOSPITALS OF QAZVIN

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**Background and Aim:** Klebsiella pneumoniae is a member of Enterobacteriaceae which causes several serious nosocomial infections. The most important virulence factor in these bacteria is Muco-viscosity associated serotype K1. serotype K2 is another important virulence factor in bacteria which play important role in micro-organism virulence. The aim of this study was to detect Serotypes K1 and K2 among clinical isolates of K. pneumoniae collected from educational hospitals of Qazvin.

**Methods:** In this study, 149 isolates of K. pneumoniae were collected from different clinical samples including urine, blood, wound in Qazvin Hospitals. All isolates were identified by standard laboratory methods and were further examined for the presence of Serotypes K1 and K2 using PCR and sequencing methods.

**Results:** In total, 98(65%) isolates carried the serotype K2 and serotype K1,which (19) 53% out of 65% was for K1 and (19) 12% out of 65% was for K2 and 51 (34%) of total remaninig percentage of 149 samples was for another serotypes. respectively Serotypes K1 and K2 was mostly isolated in urine (24%)and (9%) samples. The isolates which carried Serotypes K1 were isolated mostly (24%) from intensive care and infection patients.wherase the isolates which carried serotypes K2 were isolated mostly (6%) from infection patients.

**Conclusion:** The finding of this study shows the considerable presence of Serotypes K1 and K2 among clinical isolates of K. pneumoniae, especially in intensive care unit in Qazvin hospitals. The clinical importance of this virulent organism emphasizes on the necessity for establishing tactful policies associated with infection control and prevention strategies in our hospital settings.

**Keywords:** Klebsiella pneumonia, Capsular polysaccharide, Serotype

# P394 - 533: EXPRESSION OF THE RECOMBINANT B8/1 GENE OF ECHINOCOCCUS GRANULOSUS IN ROSETTA(DE3) E.COLI

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**Background and Aim:** Cystic echinococcosis (CE) is a zoonotic disease caused by the larval stage of the dog tapeworm Echinococcus granulosus. Being distributed worldwide, this zoonosis is considered a public health problem in areas dedicated to the raising of livestock. The metacestode of E. granulosus usually develops in patients into a fluid-filled unilocular cyst. The clinical diagnosis of CE often requires a combination of physical examination, imaging techniques and antibody detection in serological tests, while an antibody detection test is still not available. In an attempt to remove this shortcoming in the present study we subcloned the truncated B8/1 (tB8/1) gene from E. granulosus, in an expression vector and transformed the recombinant vector in Rosetta (DE3) E.coli strain to be used as a recombinant antigen for diagnosis of hydatidosis.

**Methods:** TB8/1 gene was subcloned to expression plasmid pET28b(+). The cloning was confirmed with colony PCR and digestion of recombinant pET28b-B8/1 plasmid. The recombinant plasmid was then transferred to Rosetta (DE3) strain, and expression of the protein was analyzed by SDS-PAGE.

**Results:** The presence of B8/1 gene fragment in the recombinant plasmid was confirmed by restriction digestion using Nde1/HindII1 enzymes. Sequence analysis of the clone revealed 100% homology with the published sequence of B8/1. SDS-PAGE analysis confirmed the expression and the molecular weight of this protein about 11 KDa.

**Conclusion:** We successfully cloned tB8/1 gene in the pET28b(+) plasmid and transformed it into the Rosetta (DE3) strain. Examining the ability of recombinant tEgB8/1 in detection of cystic echinococcosis infection is planned.

**Keywords:** Echinococcus granulosus, Diagnosis, Recombinant Proteins

# P395 - 537: MOLECULAR IDENTIFICATION AND DETECTION OF EXOTOXIN A GENE AMONG PSEUDOMONAS AERUGINOSA ISOLATED FROM HOSPITAL OF QAZVIN AND TEHRAN, IRAN

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic gram-negative bacillus and is one of the most important clinically significant and often causing nosocomial infections.This pathogen secretes a number of extracellular proteins. Some strains of P. aeruginosa secrete an enzymatic protein called exotoxin A. the most toxic of which is the protein PE.( exoA) , a 66,000-MW protein product of toxicogenic strains of P. aeruginosa, has been implicated as a lethal factor in burn victim bacteremias. ETA enters the cytoplasm of host cells by receptor-mediated endocytosis and catalyzes the ADP ribosylation of eukaryotic elongation factor 2. Inactivation (eEF-2) inhibits protein synthesis, followed by eventual cell death. The aim of this study was to evaluate the frequency of toxA genes among clinical isolated from Qazvin, and Tehran hospitals.

**Methods:** In total 115 clinical P. aeruginosa isolates were collected from different sampel among admitted patients in Qazvin, and Tehran hospitals in 2012-2014 . All isolates were identified by the standard laboratory methods. Genomic DNA from clinical specimens extracted was using boiling. PCR assays were performed for detection of toxA gene among isolates.

**Results:** In this study, 110(73/3%) of isolates were positive for toxA genes. The positive isolates were mostly obtained from blood 41 (27.3%) samples and patients admitted in ICU 31(20/7%) wards.

**Conclusion:** Considering the moderate presence of toxins producing isolates, rapid identification of them and use of the appropriate infection control measures are necessary to prevent further spread of infections by these resistant organisms.

**Keywords:** Pseudomonas aeruginosa, exotoxin A, PCR

# P396 - 540: EVALUATION OF THE PREVALENCE OF HERPESVIRAL ENCEPHALITIS IN CHILDREN WITH ASEPTIC MENINGOCOCCAL DISEASE IN IMAM REZA HOSPITAL, BOJNOURD-NORTH KHORASAN - IN THE SUMMER AND AUTUMN OF 1395

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**Background and Aim:** Herpesviruses are among the most commonly found viral agents in children that cause systemic diseases, especially nervous system disorders. The prevalence is 2.2 cases per 1,000,000 people and most of the cases are seen in adults. About 90% of cases of HSV-induced encephalitis are caused by HSV-1 in adults, and HSV-2 is more associated with recurrent meningitis in adults and congenital meningococcal infections in neonates. Today, PCR on CSF is the main method for detecting herpes simplex encephalitis with sensitivity and specificity of over 95%.

**Methods:** In this cross sectional study, all of the CSF specimens referring to Imam Reza Hospital in the summer and autumn of 1395, with a doctor's opinion that they had symptoms of aspetic meningococcal disease, were evaluated by PCR for the presence of HSV1,2.

**Results:** Of the 53 suspected cases of aseptic meningococcal infections, 8 cases (15.09%) were positive for the presence of herpes viruses.

**Conclusion:** One of the problems with this study was that there were not enough facilities to rule out other causes of meningococcal malignancies such as arion, rubella, chicken pox and measles, which were common causes of children with meningeal encephalitis. Performing PCR, which is a sensitive and proprietary method for detecting HSE in CSF, is fast and almost easy, and is able to detect the virus even though it is extremely low. Due to the lack of valid laboratory tests for the detection of herpes viruses such as serological tests, PCR can be used to detect the virus quickly and accurately.

**Keywords:** Herpes Simplex Virus, PCR, Meningoencephlitis

## P397 - 542: ISOLATION AND PURIFICATION OF MYXOBACTERIA FROM SOIL

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**Background and Aim:** Microbial secondary metabolites are amongst the most important pharmaceuticals and Myxobacteria are known as excellent producer of such metabolites, especially antimicrobial compounds.The main objective of this study was to isolate soil Myxobacteria for investigation of their ability for bioactive compound production.

**Methods:** Isolation of Myxobacteria form soil samples was done using several different methods such as direct culture or indirect culture of diluted samples. For this propose some standard and classic bacteriological techniques were exploited. Cellulose paper and E. coli biomass were used as carbon and energy source on ST21 agar and WAT agar, respectively. Small portion of each soil sample were cultured on mentioned media. Incubation was performed at 28-30°C in dark. After 2 weeks, fruiting body formation was checked each day for 1 to 2 months. Contaminated plates were deleted. Purification of fruiting bodies was done by sub-culture onto new plates. VY2 and Nutrient agar plates were used for checking the purity of isolates as well as for preparation of active cells.

**Results:** Two different myxobacterial strains were detected (regarding their shape and growth model in culture media). The 16S rRNA sequence study using DNA extracted from pure cultures confirmed the identity of isolates.

**Conclusion:** In the next step, bioactive compounds production by bacteria in the liquid media will be examined via Bioautography methods conducted by thin layer chromatography and LC-MS.

**Keywords:** Myxobacteria, secondary metabolite, bioactive

# P398 - 546: PRODUCTION, CHARACTERIZATION AND PURIFICATION OF DESFERRIOXAMINE B FROM STREPTOMYCES PILOSUS CULTURE

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**Background and Aim:** Desferrioxamine B (DFO) is a hydroxamate-containing siderophore that is produced by Streptomyces pilosus in its culture medium and it has been used for removing the over loaded iron in thalassemia patients as a strong iron chelator.

**Methods:** In this study, production of DFO in Nutrient broth, YM (yeast and malt extract) broth and a iron-free minimum medium was evaluated in a 8 days period of incubation at 28°C in a shaker incubater (150 rpm). A spectrophotometric assay was applied for primary monitoring of DFO production and after that liquid-liquid extraction method followed by solid-phase extraction method was used for semi-purification of the product. Also reverse phase High-Performance Liquid Chromatography was exploited for separation and then characterization of DFO by LC-MS method.

**Results:** DFO was produced in all three media according to data obtained from spectrophotometric assay.SPE was better than liquid-liquid extraction for cleaning-up of all samples and LC-MS could confirmed the production of DFO as well.

**Conclusion:** In the following we will scale up this method from analytical to preparative HPLC for purification of this product.

**Keywords:** Desferrioxamine B, S. pilosus, HPLC

# P399 - 548: FREQUENCY OF BACTERIAL AGENTS ISOLATED FROM PATIENTS WITH CHRONIC SINUSITIS IN TEHRAN CITY

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**Background and Aim:** Rhino sinusitis is Inflammation of the nose and paranasal sinuses that at least take 12-8 weeks long. Obtaining an accurate infectious microbial agent in kind of sinus infections are the most important guide for choosing the appropriate drug therapy. It is critical to isolate the specific pathogen in many serious, life-threatening infections, especially sinus infections. The aim of this study was to determine whether bacteria were present in clinical samples from chronic maxillary sinusitis.

**Methods:** Sinus mucosa samples of patients with chronic sinusitis were collected (n = 60) from Rasoul-e-Akram Hospital in Tehran City. Sinus mucosa samples of the excretion OMC (Osteomeatal Complex) area of patients with chronic sinusitis after getting consent from patients (or their guardians) were collected by endoscopy. Then sinus mucosa samples were cultured in appropriate medium and were identified by biochemical tests.

**Results:** Sixty bacterial strains from sinus mucosa samples was isolated and identified. Rate of frequency of bacterial agents were 12% Staphylococcus aureus, 7% Enterobacter spp., 9% E. coli, 21% St. D group, 12% Staphylococcus saprophyticus, 3.5% Staphylococcus epidermidis, 12% Corynebacterium spp., 3.5% Lactobacillus spp., 5% St. non-hemolytic, 3.5% Pseudomonas spp., 7% Klebsiella spp. and 3.5% Listeria spp. and Micrococcus spp.

**Conclusion:** This study showed that bacterial infections in chronic sinusitis comprise a wide range and can be very different in different people. So by using antibiogram test and non-prescription of antibiotics regardless of the type of bacteria, will have an important role in recovery and lack of antibiotic resistance.

**Keywords:** Rhino sinusitis, Sinus, Osteomeatal Complex, Bacterial Infection

# P400 - 557: DETECTION OF PROTEUS SPP. IN HUMAN URINE BY AMPLIFICATION OF RIBOSOMAL GENE IN URMIA

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**Background and Aim:** Proteus is an opportunistic pathogen that can cause urinary tract infection in human beings. The accurate and rapid identification and quantification of proteus is necessary for early treatment. Compared with culture-based methods, the PCR method is faster, more sensitive and more specific to detect bacterial strains. The purposes of present study were to detect proteus in people who suffer from Urinary Tract Infection and to determine the frequency of proteus.

**Methods:** In present study 550 urine samples were studied by culture and PCR method to detect proteus. PCR assay was employed to detect peoteus before and after culture.

**Results:** Using culture 174 samples were positive and among these, 5 proteus isolates were identified. Among 550 samples 17 (3%) were positive using primers specific for 23s rRNA gene.

**Conclusion:** The results of present study showed that a good diagnostic method should be sensitive, specific and time-efficient. Thus, PCR assay can be used instead of culture method in many cases that the causative agent of disease could not be found based on usual methods.

**Keywords:** Proteus, Urinary Tract Infection (UTI), 23s rRNA, PCR

# P401 - 563: MICROBIAL PATHOLOGY OF SOME WRITTEN DOCUMENTS OF ASTANE QUDSE RAZAVI LIBRARY

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**Background and Aim:** Many works of the past and the history of different tribes can be found in the monographs and the manuscript. For this reason, this kind of works are of great value. The microorganisms on these kind of written sources, not only cause complications such as allergies and skin and respiratory diseases which have a harmful effect on human health, biodeteriorate them. Astane Qudse Razavi library and document center; was known as one of the richest centers and repositories of written works in Iran. The aim of this study was to investigate the initial microbial pathology of some manuscripts in this center and to detect the microbial contaminant in the air of its reservoir.

**Methods:** For this reason, sampling of written works was carried out using sterile nitrocellulose paper and swab.Then, the air of different areas of the reservoir was sampled via sedimentation method and cultured onto the some culture media. Based on macroscopic and microscopic characteristics, and some biochemical tests; fungi and bacteria were partially identified.

**Results:** Investigations showed that the isolated fungi in terms of their frequency, were Penicillium.sp, Cladosporium.sp, Alternaria.sp, Aspergillus.sp, Rhizopus.sp, Cephalosporium.sp and yeasts. Gram-positive basilli,gram-positive cocci, gram-negative bacilli and actinomycetes based on their frequency were isolated, respectively from the and air.

**Conclusion:** The role of these microorganisms on the deteriorated paper and leather should be investigated. Furthermore;detection of airborne contaminating microorganisms in the air can improve the ventilation protocols of these reservoirs. Identification of these microbial agents will help conservator and restorators to select its efficient method.

**Keywords:** Astane Qudse Razavi Library, Biodeteriorate, Microbial pathology, Written works

# P402 - 565: IDENTIFICATION OF CAPSULE TYPES K1 AND K2 OF KLEBSIELLA NOMANIA IN HUMAN URINE IN URMIA

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**Background and Aim:** Klebsiella pneumoniae is an enterobacterial and opportunistic pathogen that causes urinary tract infection (UTI), pneumonia and wound infections. K. pneumonia strains that have been reported along with bacteraemia and associated with high mortality in Taiwan, Europe, North America and Japan, possess Serotypes K1 and K2.

**Methods:** To identify predominant capsular type PCR was performed using wzc and ORF genes.

**Results:** Out of 30 Klebsiella isolates 14 (46.6%) were belong to serotype K1 and 16 isolates were belong to serotype K2. The results of present study showed that all isolates of this study possesses one of K1 and or K2 serotypes.

**Conclusion:** PCR assay is a rapid and reliable method for identification of both capsular K1 and K2 serotypes of K. pneumonia as well as identification of serotype which lost the ability of capsule synthesis.

**Keywords:** Klebsiella pneumonia, Capsular serotypes, Urinary tract infection, wzc gene, ORF gene

# P403 - 573: MOLECULAR EPIDEMIOLOGY OF AVIAN PASTEURELLA MULTOCIDA ISOLATES CIRCULATING IN IRAN BY MULTILOCUS SEQUENCE TYPING

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**Background and Aim:** Currently, Multilocus Sequence Typing (MLST) is classified as an optimum method in the population structure analysis and long-term epidemiological studies of numerous pathogenic bacteria. Pasteurella multocida, the causative agent of pasteurellosis in birds has been long circulating in the Iranian environment. This work was therefore conducted to investigate the level of diversity within the Pasteurella multocida population in Iran.

**Methods:** Five archived avian P. multocida isolates collected from different geographical locations in Iran were sub-cultured onto blood-agar plates. Boilates prepared from isolates were used in MLST-PCRs according to instructions provided by the Pasteurella multocida MLST databases. PCR amplicons were sequenced and results were comparatively scrutinized against those already registered with the P. multocida MLST databases.

**Results:** Four categorically different sequence types (ST) identified in this study with four new alleles found at adk, est, pgi and pmi genes has not been reported before.

**Conclusion:** Detection of four ST types among five isolates reflects a high level of diversity in the P. multiocida population. Do we expect a typically heterogenic population of this avian pathogen in Iran? How large is the extension of such heterogeneity in this environment? Can somebody consider all of this raised in Iran or imported from abroad? These are few questions that their answer will remain for further similar studies with larger number of isolates.

**Keywords:** Pasteurella multocida, Avian isolates, Multilocus sequence typing

# P404 - 582: PREVALENCE OF PANTON-VALENTINE LEUKOCIDIN (PVL) GEN IN STAPHYLOCOCCUS AUREUS ISOLATED FROM NOSOCOMIAL INFECTIONS

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**Background and Aim:** Staphylococcus aureus is one of the important pathogen and major cause of nosocomial and community-acquired infections. The present study was carried out to study the distribution of Panton-valentine leukocidin (PVL) gene as an important virulence factor that cause WBC destruction. This study was determine the frequency of PVL gen in Staphylococcus aureus isolated from patients hospitalized in Isfahan hospitals.

**Methods:** Collectively, 100 isolates of S. aureus were obtained from Isfahan hospitals and confirmed with biochemical tests (coagulase, mannitol fermentation, and DNase). The antibiotic resistance patterns were studied using disk diffusion method.

**Results:** Out of 100 isolates, 56.2% were PVL positive and 19.8% were from abscess, 51.7% were from wound, 23.2% from bed sore and 5.3% of isolates detected from tracheal secretion. Among all of detected isolates, 87.8% were resistance to methicillin.

**Conclusion:** This study show the high prevalence of PVL positive in wound strains. More studies that are complete are necessary for understanding of distribution of these virulent isolates. It would help to decrease the risk of infections. These infections with this MDR resistance require more advance hospital care with emerging demand for novel antibiotics.

**Keywords:** Staphylococcus aureus, Panton-valentine leukocidin, nosocomial infections

# P405 - 583: ANTIBIOTIC RESISTANCE AND CARRIAGE INTEGRON CLASSES IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII FROM NOSOCOMIAL INFECTIOUS, IRAN

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**Background and Aim:** Acinetobacter baumannii is a significant nosocomial pathogen around the world, especially in the intensive care unit that most A. baumannii infections are caused by the outbreak strains, which can spread rapidly between patients. This study has been performed in Acinetobacter baumannii isolates, aimed to detect integron classes I, II, III and molecular typing of A.baumannii genes.

**Methods:** In this study, Acinetobacter baumannii isolated from 130 patients in Isfahan hospitals then antibiotic resistance pattern was determined by disk diffusion method (Kirby Bauer). The presence of genes coding in antibiotic resistance and Integrons class I, II, III were analyzed by using of M-PCR method.

**Results:** Antibiotic resistance pattern for Acinetobacter baumannii show that the high resistance was for ciprofloxacin with frequency of 88.2%, ceftazidime with 83.2%, and tetracycline with frequency of 86.5% the most sensitive antibiotics were chloramphenicol, and nitrofurantoin with frequency of 4.5% and 6.2% resistance. Also in this study Frequency of Integrons class 1, 2, 3 were (97%), (30%), (7.4%) respectively.

**Conclusion:** High prevalence of Integrons among Acinetobater baumannii isolated from Isfahan hospitals indicate the importance role of integron classes in multidrug resistance. Considering the increasing pattern of MDR infections especially among ICU patients with critical problems is one of the important issue of treatment, which can be effective strategy for curing.

**Keywords:** Acinetobacter baumannii, antibiotic resistance, integron classes, Isfahan hospitals

# P406 - 589: THE PREVALENCE OF CHLAMYDIA TRACHOMATIS INFECTION AMONG CERVICITIS AND ASYMPTOMATIC WOMEN IN SHAHREKORD, IRAN

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**Background and Aim:** Chlamydia trachomatis infection is one of the most common sexually transmitted infections, which are asymptomatic in 80% of infections. In clinical cases, cervicitis is one of the main symptom, which may be a potential for significant complications including pelvic inflammatory disease, ectopic pregnancy and infertility in the female reproductive system. The aim of this study was to determine the prevalence of Chlamydia trachomatis infection among female of Shaherkord, Iran by PCR test.

**Methods:** In this study, Dacron sterile swabs were used to collect 135 samples including 53 and 82 samples from visible, purulent or mucopurulent endocervical exudates of clinically diagnosed cervicitis cases and asymptomatic women, respectively. DNA was extracted by Geneall Genomic DNA extraction kit and nested PCR test was used to detection of C. trachomatis genome. The result of both groups were compared and analyzed by SPSS software (version16).

**Results:** Totally, nine out of 135 samples were positive. They were include, four (7.54%) and five (6.06%) samples belong to cervicitis and apparently healthy groups, respectively. Statistical analysis showed no significant correlation between chlamydial infection and cervicitis.

**Conclusion:** There is a relatively high prevalence of C. trachomatis in women with cervicitis and asymptomatic cases in Shahrekord. Therefore screening and treatment of infected cases are essential to decrease of prevalence of reproductive system infection and cost of treatment.

**Keywords:** Chlamydia trachomatis, women, cervicitis, PCR

# P407 - 598: CYTOTOXIN-ASSOCIATED GENE A (CAGA) STATUS AMONG HELICOBACTER PYLORI SEROPOSITIVE PATIENTS

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**Background and Aim:** Helicobacter pylori (H. pylori) infection is associated in the development of peptic ulcer disease and gastric cancers. Cytotoxin-associated gene A (CagA)-positive H. pylori infection has been more closely associated with gastric disease than CagA-negative infection. This study evaluated the CagA status among H. pylori seropositive patients in a population of dyspeptic patients from Kerman, Iran.

**Methods:** A total of 91 serum samples (70 seropositive for H. pylori IgG and 21 seronegative for H. pylori IgG, as control) in dyspeptic patients from Kerman city were tested for anti-CagA IgG by a commercial enzyme-linked immunosorbent assay (ELISA) kit (Euroimmun, Germany), as described by manufacturer's instruction.

**Results:** The results showed a seropositivity rate of 48.6% (34 of 70) and 61.9% (13 of 21) for anti-CagA IgG antibody among H. pylori IgG seropositive and seronegative patients, respectively.

**Conclusion:** The findings showed that the anti-CagA IgG antibody is common in both H. pylori IgG seropositive and seronegative patients. Also, this implied the importance of CagA-positive H. pylori infections in the development of gastric diseases and cancers.

**Keywords:** Cytotoxin-associated gene A (CagA), Helicobacter pylori, Seropositive, Kerman, ELISA

# P408 - 608: SCREENING KOOHDADASHT SOIL FOR ANTIBIOTIC-PRODUCING MOLDS

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**Background and Aim:** The increase in antimicrobial resistance of some potentially pathogenic micro organis to multiple drugs, makes it necessary to search for new and more effective antibiotics.The purpose of this study was to screen The soil from some randomly selected location in Koohdasht (lorestan -Iran) for antibiotic-producing molds.

**Methods:** 100 samples collected from pre-determined locations were transported to the laboratory. upon arrival one gram from each sample was suspended in 9ml sterile physiological saline to obtain a 10-1 dilutions. Following dilution a 0.1 ml of each sample was transferred to each of a duplicate plates containing saboraud dextrose agar (SDA), spread on the surface by aid of an L- form sterile glass rod. Inoculated plates were incubated at room temperature for one week. At the end of the incubation period, plates were examined for mold growth. All mold colonies were transferred to fresh SDA plates for purification of isolated colonies. To investigate the antibiotic-producing ability of the isolated molds, each mold colony was planted on the surface of each of the duplicate plates seeded with S.aureus und P.aeruginosa .All plates were incubated at 37ºC for 24 hours.

**Results:** Our result showed that none of the isolated mold colonies had the ability to produce antibiotic that could inhibit the growth of the micro organisms .

**Conclusion:** Therefore, we can speculate that the soil of the selected location may possesses the necessary micronutrients and minerals required for growth. Then the micro organisms did not need to compete for growth and survival.

**Keywords:** Mold, antibiotic, koohdasht soil

# P409 - 609: DETECTION OF STREPTOCOCCUS AGALACTIAE AT VAGINAL COLONIZATION IN PREGNANT WOMEN BY PCR

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**Background and Aim:** The aim of this study was to evaluate PCR assay targeting 16S rRNA primers compared with conventional culture method for direct detection of GBS in vaginal specimens of pregnant women at 35–37 weeks of gestation in Hamadan.

**Methods:** 203 vaginal specimens of pregnant women at 35–37 weeks of pregnancy from June 2013 through February 2014 were evaluated for detection of GBS using culture method and PCR assay.

**Results:** Prevalence of GBS in 203 collected samples was 7.39% using culture method and 19.70% using PCR assay. 25 specimens resulted positive by PCR and negative by culture; 2 specimens resulted positive by culture and negative by PCR. Generally, a total of 42 specimens (20.69%) were considered true positive. PCR results in comparison to culture (as gold standard) revealed sensitivity of 88.24%, specificity of 87.44%, positive and negative predictive value of 35.71%, 98.95%, respectively, and accuracy of 87.50%.

**Conclusion:** The study data demonstrated that performing only culture method leads to missed false negative carrier individuals. Thus, it is recommended that both the PCR assay and conventional culture method perform routinely in order to detect GBS in pregnant women accurately. PCR diagnosis demonstrated a shorter turnaround time when compared with time consuming culture method. However, presence of homology in 16S rRNA gene regions in some bacteria, as shown in this study, may be leading (in rare cases) to report false positive results.

**Keywords:** Streptococcus agalactiae, Pregnancy, Polymerase Chain Reaction

# P410 - 618: EVALUATION OF TWO METHODS IN ISOLATION OF NOCARDIA SPECIES FROM SOIL

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**Background and Aim:** Nocardia spp. are gram-positive, aerobic and weakly acid-fast bacteria which are cause a variety of acute and chronic infections in animals and humans. Soil and other environmental resources are natural habitant of this group of bacteria. According to available hypothesis, Nocardia spp. are survive on the environmental resources of healthcare facilities and can invasion to susceptible hosts. The objective of this study was to comparison of two methods for isolation of Nocardia species from the soil.

**Methods:** A total of 30 soil samples were collected from agricultural areas, parks, gardens and hospitals in Isfahan. For isolation Nocardia species. Soil samples were studied using serial dilution and Slip-buried methods. Samples were incubated at 30 °C for 2-3 weeks in all two methods. Then, resistance to lysozyme broth was used to confirm the genus Nocardia.

**Results:** From total of 30 samples; seven (23.3%) isolates by serial dilution and three (10%) isolates; were isolated with Slip-buried method.

**Conclusion:** We found that Serial dilution method was suitable method, because in the slip-buried method we used from streptomycin and chloramphenicol and due to susceptibility of some Nocardia species to this antibiotics, these bacteria weren't isolated using slip-buried method. In addition, serial dilution method is cheaper than slip-buried method.

**Keywords:** Nocardia, Soil, Slip-buried method, Isolation methods, Iran

# P411 - 620: CHARACTERIZATION OF IRANIAN GRAPEVINE ISOLATES OF AGROBACTERIUM TUMEFACIENS AND A. VITIS

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**Background and Aim:** Crown gall of grapevine is a widespread and serious disease of this plant worldwide. The pathogen spreads systematically through latently infected tissues of symptomless Vitis spp., and persists in them and in crop debris that remains in the vineyards. This disease can adversely affect vine vigor and growth, thus reducing crop yield.

**Methods:** Symptomatic crown and stem tissue samples were collected, from which 50 strains were isolated. A standard set of physiological and biochemical tests were performed for differentiation of Agrobacterium spp., including evaluation of growth on D1M agar, 3-ketolactose production, growth in 2% NaCl, growth at 35°C, acid production from Manitol, Maltose, Arabinose, Adonitol, Trehalose, Sucrose, melibiose, fructose, lactose, clearing of PDA plus CaCO3 medium, utilization of tartrate, citrate and malonate, motility at pH 7.0, and oxidase reaction.

**Results:** Fifty bacterial strains with white, mucoid and convex colonies were isolated from symptomatic crown and stem tissue, all of which were catalase and oxidase positive, motile, aerobic, grew on 2% NaCl and hydrolyzed esculin and Tween 80. Of these, 23 that produced colonies with dark red centers and white edge on RS medium, utilized L-tartrate and malonate, and did not produce ketolactose from lactose and pellicle in ferric ammonium citrate broth were presumed to be A. vitis strains whereas the remaining 17 isolates were identified as A. tumefaciens.

**Conclusion:** In this study based on morphological, physiological and biochemical properties, 23 strains were identified as Agrobacterium vitis and the remaining 17 strains as A. tumefaciens as the causal agent of grapevine crown gall disease.

**Keywords:** Crown gall, Grapevine, Agrobacterium tumefaciens, Agrobacterium vitis

# P412 - 621: BACTERIAL ENDOPHYTES AS POTENTIAL BIOCONTROL AGENTS OF CROWN GALL DISEASES

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**Background and Aim:** Endophytic bacteria form a large proportion of the indigenous microbial communities in plants. Their internal colonization is often assisted by a wide array of enzymes, which are also present in plant pathogenic bacteria. Endophytic bacteria have become adapted to the plant's selective environment and can be beneficial, neutral or deleterious for the plant by affecting plant growth and or the defence of the plant against pathogens.

**Methods:** Isolation of Endophytic Bacteria from healthy grapevine plants were performed by hawangish et al. 2011 procedures. The antibiosis and competition mechanism test was conducted to investigate the ability of endophytic bacteria to suppress the in vitro growth of Agrobacterium tumefacines in dual culture assay. Selected endophytic bacteria were characterized based on conventional methods including microscopic and colony appearances, and physiological and biochemical properties, following the methods of Schaad et al. (2001).

**Results:** Based on phenotypic characteristics (morphological, physiological and biochemical characterization such as Gram reaction and utilization of various carbon source) the representative endophytic strains were identified as Pseudomonas fluorescence, Bacillus subtillis, P. putida and Enterobacter sp. The strains were shown to be able to produce siderophores, IAA, protease, antibiotics and demonstrate certain antibacterial activity to plant pathogenic bacteria.

**Conclusion:** Endophytic bacteria could become better biocontrol agents compared with rhizosphere bacteria because they do not compete for nutrition and/or niche in apoplast. Our laboratory and greenhouse studies obtained four promosing isolates of endophytic bacteriafor biocontrol of grapevine crown gall disease. Crown gall of grapevine is an economically important disease in all areas where grapes are grown.

**Keywords:** Endophytic bacteria, Agrobacterium tumefaciens, Grapevine, Crown gall

# P413 - 622: MOLECULAR IDENTIFICATION OF PSEUDOMONAS SYRINGAE PV. SYRINGAE STRAINS CAUSING BACTERIAL CANKER DISEASE

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**Background and Aim:** Bacterial canker and blast of stone fruit trees, caused by Pseudomonas syringae pv. syringae (Pss), affects all commercially grown Prunus species in Iran. Pss is unique among most P. syringae pathovars in its ability to cause disease in over 180 species of plants in several unrelated genera

**Methods:** These stains were isolated from diseased tissues of stone fruit trees and were collected from different geographic regions of West Azerbaijan. For Identification of isolates, LOPAT tests and the biochemical and physiological confirmation tests were done according to Schaad et al. 2001. Total genomic DNA of strains was prepared by using a modification of the procedure of Ausubel et al. (1992). Two 21-mer oligonucleotides from syrB gene [primer B1 (5′-CTTTCCGTGGTCTTGATGAGG-3′) and primer B2 (5′-TCGATTTTGCCGTGATGAGTC-3′)] were selected for PCR . The primers B1 and B2 locate into the open reading frame of the syrB gene and yield a 752-bp product.

**Results:** All Pss strains producing fluorescence on KB medium were negative for oxidase, potato rotting, and arginine dihydrolase and positive for levan production and the hypersensitive response on tobacco (LOPAT group Ia). All strains were also tested for the presence of the syrB gene, and all isolates amplified a 752 bp fragment with the syrB primers as expected.

**Conclusion:** The production of lipodepsinonapeptides can be detected by PCR amplification using specific primers to amplify the syrB gene encoding these metabolites. Because the toxins are considered the main virulence factor of Pss, this analysis can greatly assist the identification and characterization of putative Pss strains.

**Keywords:** Stone friut, Pseudomonas syringae pv. syringae, SyrB gene

# P414 - 623: BIOCHEMICAL DIVERSITY OF PSEUDOMONAS SYRINGAE PV. SYRINGAE STRAINS THE CAUSAL AGENT OF BACTERIA CANKER ON STONE FRUIT SPECIES

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**Background and Aim:** Pseudomonas syringae is a phytopathogenic bacterial species currently divided into more than fifty pathovars and nine genomospecies. This bacterium is responsible for diseases on stone fruits, and has been and still is of concern and often of economic importance in these crops worldwide.

**Methods:** Strains were identified according to the methodology described by Schaad et al. (2001), including grouping by Gram reaction, oxidation⁄ fermentation test, fluorescence on KB medium, LOPAT test. Strains were evaluated for their ability to hydrolyse gelatin and esculin, and to utilize L-lactate, D-tartrate and homoserine as the sole carbon sourc. Furthermore, 52 other carbon sources were assayed with the standardized API 50 CH (Biome´rieux) test, using the Ayers medium without carbon source as the basal medium. The sets of API test mediums were incubated at 250C during 5 days.

**Results:** The 70 strains were identified as Pss on the basis of their metabolic profiles and pathogenic tests on peach, as follows: all of the strains were Gram-negative, had an oxidative metabolism, and belonged to the LOPAT Ia group (LOPAT reactions +---+). The Pss strains displayed biochemical profiles that were congruent with their assignation to the pathovar syringae.

**Conclusion:** From the 60 biochemical tests performed, 45 tests produced a clear 100% response, either positive or negative, for all the Pss strains. Additionally, the majority of the strains utilized glycerol as the sole carbon source (87-9% of the strains), whereas the majority did not utilize cellobiose (89%), D-tartrate (84-6%), DL-lactate (83-5%) and D-arabinose (81-8%), and did not hydrolyse gelatin (81-3%).

**Keywords:** Biochemical test, Pseudomonas syringae pv. syringae, LOPAT test, Stone friuts

# P415 - 634: MOLECULAR TYPING OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS BY MECA GENE POLYMORPHISM

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**Background and Aim:** Methicillin-resistant Staphylococcus aureus (MRSA) has been identified as one of the three most frequent nosocomical pathogens. Numerous virulence factors involved in infection and resistance to antibiotics. Resistance of S. aureus to methicillin and all beta-lactam antibiotics is a result of a protein (ie, penicillin binding protein2a (PBP2a) that is found in the surface of MRSA. PBP2a encoded by mecA gene located on the chromosome of MRSA that shows low affinity for beta-lactam antibiotics.

**Methods:** In this study, a total of 200 samples were collected. Samples were obtained from nasal swabs in hospitalized patients in Islamic Azad University Teaching Hospitals from October 2015 to August 2016. Staphylococcus aureus strains were detected by biochemical tests. Disk diffusion antibiotic susceptibility tests performed according to the guidelines of clinical and laboratory standards institute (CLSI). It also detects the mecA gene of Methicillin-resistant Staphylococcus aureus strains (MRSA) which encodes the PBP2a by polymerase chain reaction (PCR). The PCR products using a restriction fragment length polymorphism (PCR-RFLP) method with enzymes XbaI and PstI were prepared.

**Results:** Resistance to methicillin was seen in 80 isolates and all strains were sensitive to vancomycin. Four distinct RFLP patterns for mecA gene were found among 80 isolates of methicillin resistant S. aureus (MRSA).

**Conclusion:** Our results revealed the high prevalence of the Methicillin-resistant Staphylococcus aureus nasal carriers in these hospitals; it is possible to reduce transmission of infection in both hospital staff and patients by analysis of the resistance patterns. Also it can help the physicians for correct management of infections.

**Keywords:** Methicillin resistant Staphylococcus aureus, mecA, RFLP

# P416 - 664: THE PREVALENCE OF ERYTHRASMA IN TEHRAN , IRAN, 1390-1396

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**Background and Aim:** Erythrasma is a chronic superficial infection of the intertriginous areas (skin folds). Erythrasma caused by Corynebacterium minutissimum can be confused with superficial mycoses. Patient with erythrasma can also have concomitant infections with other organisms. This skin infection can affect anyone but is especially present in individuals with diabetes mellitus, obesity (overweight) or other underlying diseases. Addition risk factors for erythrasma include hyperhidrosis, poor hygiene, older age, and sensitive skin.The purpose of the present study was detected the frequency and risk factors of erythrasma in patient with clinically suspected fungal surface infection.

**Methods:** Skin samples from 1790 patients clinically suspected of erythrasma between 2010-2017 were examined both by methylene blue stain and 10% KOH smear to identify Corynebacterium minutissimum (C. minutissimum) by direct observation of filamentous bacilli.

**Results:** Out of 1790 cases which were examined, 177 cases were diagnosed erythrasma (male 77% and female 23%) in Groin, Axillar, pubice, sub mammary, Toe Web. The most patients (90%) have erythrasma in one site and a few patients (11%) have in more of one site.The highest prevalence of erythrasma was found in male and in patients between 25 and 45 years of age.

**Conclusion:** The result of the present study showed that 9.9 % of suspect patient had erythrasma.

**Keywords:** Erythrasma, Corynebacterium, minutissimum

# P417 - 681: IDENTIFICATION AND PHENOTYPIC DIVERSITY OF XANTHOMONAS ARBORICOLA PV. JUGLANDIS ISOLATED FROM WALNUTS

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**Background and Aim:** Bacterial walnut blight caused by Xanthomonas arboricola pv. Juglandis (Xaj) is one of the most serious and economically important diseases of walnut, occurring in all major walnuts-growing areas of the world. There are no effective control methods, thus bacterial walnut blight may cause considerable yield losses (up to 70%) under favourable conditions for the disease.

**Methods:** For isolation of strains the causal agent of bacterial walnut blight, the NA and YDC mediums were used. Isolations were made from visibly infected leaves and fruits. Different phenotypic features were assessed, including the utilization of sole carbon and nitrogen sources, tolerance to different concentrations of NaCl, and pH ranges. The Ayer medium was used to analyze the ability of these isolates to metabolize different carbon sources such as D-galactose, D (+)-arabitol, D-arabinose, salicin, D-glucose, sucrose, trehalose, D-maltose, raffinose, xylose, rhamnose, ribose, sodium citrate, melibiose, fructose, or sorbitol. The results of the study on phenotypic features were coded (1) for a positive reaction and (0) for a negative one and results were assessed with Ntsys program.

**Results:** All bacterial cells were aerobic, Gram-negative, and rod-shaped with yellow color. The phenotypic features were compared by cluster analysis. Based on morphological, biochemical and physiological properties, the bacterium that causes leaf spot and blight of walnut was therefore identified as Xaj. The resulting dendrogram of Analyzing of phenotypic characteristics showed two main groups at 92 % similarity.

**Conclusion:** In this study, phenotypic (morphological, biochemical and physiological) methods used for characterization of Xaj isolates disclosed a high similarity among them.

**Keywords:** Walnut, Xanthomonas arboricola pv. juglandis, Phenotypic diversity

# P418 - 682: STUDY THE PREVALENCE OF STAPHYLOCOCCUS AUREUS BACTERIA IN UMBILICAL CORD INFECTION OF KERMANIAN INFANTS BY PCR.

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**Background and Aim:** In general, one million of infant deaths yearly are reported in the world due to infections, one of the most important infections is associated with umbilical cord. Staphylococcus is considered as the most important bacterial agent of omaphalitis. Early diagnosis of omaphalitis is carried out by novel techniques rather than microbial culture, which allows the use of appropriate antibiotics. PCR is an affordable, quick and efficient method which could be utilized for molecular diagnosis.The aim of this research is diagnosis and study of Staphylococcus aureus prevalence among other pathogens causing omaphalitis in Kerman infant population.

**Methods:** In present study, 45 infectious umbilical cord samples were collected from Kerman Hospitals followed by DNA extraction, then PCR reactions were performed using S. aureus 16S rRNA gene specific primers. Finally, PCR product was analyzed by agarose gel electrophoresis.

**Results:** The results of rRNA16s gene amplification (by PCR method) demonstrated that 4.4% of umbilical cord samples were infected with Staphylococcus aureus.

**Conclusion:** Regarding the prevalence of Staphylococcus aureus in Infants infections, it is important to use a precise and efficient PCR method, which is appropriate to the frequency of this pathogen in Omphalitis.

**Keywords:** Staphylococcus aureus, umbilical cord infection, PCR

# P419 - 683: MOLECULAR IDENTIFICATION OF ERWINIA AMYLOVORA ISOLATES THE CAUSAL AGENT OF FIRE BLIGHT

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**Background and Aim:** The use of 16S rRNA gene sequences to study bacterial phylogeny and taxonomy has been by far the most common housekeeping genetic marker used for a number of reasons. These reasons include (i) its presence in almost all bacteria (ii) the function of the 16S rRNA gene over time has not changed and (iii) the 16S rRNA gene (1,500 bp) is large enough for informatics purposes.

**Methods:** In this study 30 strains of E. amylovora were collected from different host plats from various geographic locations of West Azerbiajn. A standard set of bacteriology methods including morphological and biochemical tests were done for identification of strains. DNA was obtained by KOH lysis procedure. All PCRs were carried out in a volume of 25ml with 16S rRNA primers as described previously. The sequences obtained were compared with those from GenBank, using the BLASTN program. These sequences and those of related bacteria were aligned using the Clustal W program. The phylogenetic trees were inferred using the neighbour joining model and MEGA5.0.

**Results:** A 1.5-kb fragment was amplified with the 16S rDNA primers fD2 and rP1, as described above. The phylogenetic analysis based on 16S rRNA gene sequences showed that representative isolates were closely related to E. amylovora. The sequences have been deposited in the GenBank database under the accession numbers KKR12658 to K12665.

**Conclusion:** After comparing with the available sequences of other related taxa representatives, a dendrogram generated by the NJ method was created. Representative isolates were found to be phenogenetically very close to E. amylovora.

**Keywords:** Fire blight, Erwinia amylovora, 16S rRNA

# P420 - 686: IDENTIFICATION OF HELMINTHIC PARASITES IN SOME ENDEMIC AND EXOTIC FISH OF ANZALI WETLAND, GUILAN, IRAN

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**Background and Aim:** Anzali Wetland is located in the north of Iran and the southern coasts of the Caspian Sea. Over 50 species of native and exotic fish live in this wetland. Fish in natural water resources are exposed to various contaminants such as parasites, which can endanger the health and growth of these species.

**Methods:** In this survey (2014-2015), 314 species of endemic and exotic fish in Anzali Wetland including: Alburnus hohenackeri, Blicca bjoerkna, Hemiculter leucisculus, Pseudorasbora parva and Rhodeus amarus, from 3 different stations in this wetland were sampled.The specimens were transferred to the parasitology laboratory of Inland Waters Aquaculture Research Center (Bandar Anzali) and biometric characteristics were recorded.

**Results:** 11 species of parasities: Ligula intestinalis , Diplostomum paraspathaceum , Diplostomum spathaceum , Diplostomum sp. ,Posthodiplostomum cuticola , Rhabdochona denudata , Spiroxis contortus and Echinorhynchus rutili by using valid identify keys were identificated. The most of infections abundance to trematodes (8 species of fish) and the least to cestodes and Acanthocephales (each of them in 1 species) were belonged.The chi-square test and Kruskal-Wallis between various infections and parameters of sex, weight, length, and the various stations difference was not statistically significant (P> 0.05).

**Conclusion:** Infection to Gyrodactylus sp. in B. bjoerkna, H. leucisculus and P. parva; P. Cuticola in R. amarus; L. Intestinalis in A.hohenackeri, S. contortus in B. bjoerkna and R. amarus; R. denudata in A.hohenackeri, B. bjoerkna and R. amarus and also E. rutili in R. amarus were reported for the first time from Anzali Wetland.

**Keywords:** Helminth parasite, Fish, Anzali Wetland, Iran

# P421 - 691: DETERMINATION OF THE FREQUENCY OF COAGULASE NEGATIVE STAPHYLOCOCCI ISOLATED FROM CLINICAL SAMPLES IN MARAND, IRAN

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**Background and Aim:** Staphylococci, which are Gram-positive bacteria and are related to Staphylococcus family, have an optional anaerobic metabolism. Coagulase negative staphylococci is a natural flora of the body. Two decades ago, these species were emerged as pathogens responsible for nosocomial infectious. Also, due to the increasing drug resistance in these bacteria, it is important to identify them in clinical specimens. The aim of this study was to determine the prevalence of coagulase negative staphylococci in strains isolated from Clinical samples in Ayatollah kohkamari and Razi hospitals of Marand city.

**Methods:** In this descriptive cross-sectional study, samples were collected from hospitalized patients during 2016. Then, phenotypic methods and biochemical tests were used to determine coagulase negative staphylococci according to microbiological standards.

**Results:** According to the results, 130 isolates of Staphylococci were isolated. Among which, 78 isolates were coagulase negative Staphylococci.

**Conclusion:** Due to the high number of coagulase negative staphylococci in isolated samples and also creation of nosocomial infections by these bacteria, the accurate detection of coagulase negative Staphylococci strains and consequently the appropriate drug selection for treatment are necessary.

**Keywords:** Coagulase negative Staphylococci, Urinary tract infection, nosocomial infections

# P422 - 697: OCCURRENCE AND INTENSITY OF PARASITES IN NORTHERN PIKE, ESOX LUCIUS, FROM ANZALI WETLAND,SOUTHWEST OF THE CASPIAN SEA, IRAN

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**Background and Aim:** Fish in natural resource are always exposed to various contaminants, including parasites.Northern pike (Esox lucius) is a native fish in Anzali wetland. Given the importance and economic value of this fish, survey on its parasitic infections is necessary.

**Methods:** In this survey, 73 specimens of northern pike, (Esox Lucius Linnaeus,1758) were collected seasonaly from Anzali Wetland in 2016. After recording biometric characteristics, parasitology methods were used.

**Results:**. In tottaly, 10 species from 5 order of parasites including: Trichodina sp.(prevalence 13.69%), Ichthyophthirius multifiliis.( 21.97%), Tetraonchus monenteron.( 71.23%), Diplostomum spathaceum.(26.02 %), Postodiplostomum cutiula.( 1.36%), Rhipidocotyle illense.(4.10 %), Raphidascaris acus .(39.72 %),Rhabdochona hellichi.( 12.32%) and Eustrongylides exices.(2.73 %) and Lernaea cyprinacea.(5.47 %) were isolated and identified from Pike. The most and the least prevalence of these parasites were in Summer and Winter sampling respectively.

**Conclusion:** As with previous research, nematodes and monogens have the most prvalence in this fish.R. acus and T. monenteron respectively from nematodes and monogenes were the most common parasitic species in this fish. These results are consistent with the latest parasitic studies on this fish in Anzali Wetland.

**Keywords:** Anzali Wetland, Parasite, Esox Lucius

# P423 - 710: DIAGONSE STAPHYLOCOCCUS AUREUS PHARANYX CARRIERS AND ITS ANTIBIOTIC SUSCEPTIBILITY PATTERN IN THE OF ORUMEH LABORATORY

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**Background and Aim:** Staphylococcus aureus is the most common strain causing pharynx infections. Colonization of this microorganism in the pharanyx is also a source of spread of infection. In this study, the prevalence of carriers of this bacterium, was investigated among the Laboratorys orumeh iran.

**Methods:** This analytical cross-sectional study was performed on all the people, who were in contact with patients. A pharanyx sample was obtained using a sterile swap. The samples were cultured in a culture medium appropriate for staphylococcus aureus, and antibiogram was performed for positive culture sample. Data were analyzed using chi-square, independent t- and ANOVA tests. The significance level was considered to be $p<0.05$.

**Results:** Of 83 subjects (23 men and 60 women), 37 subjects were diagnosed to be Staphylococcus aureus patanyx carriers. The prevalence of Staphylococcus aureus infection had no significant difference among the participant in term of demographic variables, and 83.7% of the samples were susceptible to vancomycin, 89.1% to mupirocin, 91.3% to imipenem, 79.7% to oxacillin, and 3.4% to methicillin.

**Conclusion:** According to the results of this study, which indicate the high prevalence of the Staphylococcus aureus pharanyx carriers among the Orumeh lab it is possible to reduce mortality and economyic costs in the city through proper treatment of the diagnosed cases.

**Keywords:** Staphylococcus aureus, Disk diffusion antimicrobial tests

# P424 - 712: CHARACTERIZATION OF ERWINIA AMYLOVORA STRAINS THE CAUSAL AGENT OF FIRE BLIGHT OF POME FRUIT TREES

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**Background and Aim:** Fire blight, a bacteriosis of pome fruit trees and other rosaceous plants, can be a disastrous disease in orchards and is therefore of great economic importance. Many assays have been developed for detection of the causative agent, the gram-negative bacterium Erwinia amylovora.

**Methods:** Isolation of E. amylovora was done on Nutrient Agar. Suspected colonies of E. amylovora (white, circular, mucoid, and curved) were selected and further purified again on NA at 27°C. This operation was repeated three to four times to be sure that pure cultures were obtained for identification tests and preserved it for next investigation. For identification of E. amylovora, colony morphology was studied when it appeared in EMB and NA media. Biochemical tests like oxidative-fermentative test, nitrate reduction test, citrate utilization test, urease test, fermentation / oxidative test, TSI (Triple Sugar Iodine) test, gelatine hydrolysis, use of sucrose, manitol, glucose, fructose, mannose, trehalose, xylose, arabinose, galactose, malonate, l-alanin and cysteine as carbon sources were done.

**Results:** Morphological and Physical appearance of isolates showed whitish, circular, domed, smooth, mucoid colonies on NA media, whereas green metallic, circular, intending to spread colonies was found on EMB media. Among 50 isolates, a total of 40 were identified as E. amylovora based on physiological and biochemical properties such as use of pentoses, hexoses and amino acids as carbon sources.

**Conclusion:** After analyzing the results for all bacterial isolates, it was confirmed that 40 isolates were E. amylovora. Identification was done by morphological, physiological and biochemical tests according to the EPPO standards diagnostic protocol (EPPO/CABI).

**Keywords:** Erwinia amylovora, Physical appearance , Fire blight

# P425 - 714: GENETIC DIVERSITY OF XANTHOMONAS ARBORICOLA PV. JUGLANDIS THE CAUSAL AGENT OF WALNUT BACTERIAL BLIGHT

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**Background and Aim:** Bacterial blight of walnut, caused by Xanthomonas arboricola pv. juglandis (Xaj) is one of the most important factors, causing crop losses in many provinces of Iran. Thus, genetic characterization of Xaj is important for efficient disease management of this pathogen, farming practices and breeding efforts in the area.

**Methods:** Genetic diversity and population structure among 30 isolates of Xaj obtained from diseased walnut plants in 5 different geographical origins in Iran was characterized by ERIC-PCR marker. Taxonomy and Multivariate analysis System for personal computer (NTSYS-pc) version 2.0. Estimates for similarity were based on Jaccard's coefficient. Matrices of similarity were analyzed using the unweighted pair group method with arithmetic averages clustering method. The goodness of the dendrograms was assessed by bootstrap analysis with the WINBOOT program and 1000 repeated samplings with the replacement.

**Results:** Based on phenotypic features 30 strains that cause walnut bacterial blight were identified as Xaj. Distinct banding patterns were generated with ERIC-PCR. A dendrogram was calculated with Jaccard's similarity coefficients with unweighted pair group method clustering (UPGMA) for the combination of ERIC-PCR results, Xaj strains were differentiated into four clusters (A-D) at 65% similarity level. The dendrogram obtained from ERIC-PCR also showed that 30 Xaj strains could be split into two groups at the 85 % similarity level.

**Conclusion:** The current study showed interesting features of the Iranian Xaj populations, indicating that ERIC markers is an useful tool for analysis of genetic diversity of Xaj which can be applied in further studies including the introduction of resistant walnut species.

**Keywords:** Genetic diversity, ERIC-PCR, Xanthomonas arboricola pv. jugalndis, Walnut

# P426 - 719: CHARACTERIZATION OF ENTEROCOCCUS SPP. IN DIABETIC FOOT INFECTIONS

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**Background and Aim:** Diabetic foot infections are an increasingly common public health problem and are associated with mortality and morbidity. This increased prevalence of DFIs might be due to previous antibiotic use. DFIs is a leading cause of hospital admission in Iran. The aims of this study were isolation of bacteria from diabetic patients with foot ulceration, and confirmation of Enterococci and their genus.

**Methods:** A total of 86 diabetic patients with foot ulceration were investigated during the period of 2012-2014 in Shiraz (Iran). Swabs were collected from diabetic ulcers. From each patient two swabs for isolation of bacteria and wet mount microscopy were collected. Bacterial culture was done on microbiological media. Colonies were further characterized using various biochemical tests.

**Results:** A total of 86 diabetic patients were investigated. The cases consisted of 20 males (59%) and 14 females (41%). In this study, Enterococcus spp. were isolated from 34 (39.5%) patients. Twenty five (73.5%) patients received antibiotic treatment on admission. Fifty (44.1%) cases had random blood sugar ranged between 130-300, and 19 (55.9%) had 300-450. Of the 34 patients, 15 (44.1%) were with diabetes type 1 and 19 (55.9%) were diabetes type 2. Enterocoocus faecalis was the most common isolated Enterococcus sp.

**Conclusion:** Our data showed that resistance to vancomycin among Enterococcus spp. isolates is emerging. As revealed, significant resistance to gentamicin and imipenem were alarming. Knowledge of the causative microorganisms in DFIs and their antibiotic susceptibility profile is essential for proper treatment and infection eradication.

**Keywords:** Diabetic foot infections, Enterococcus spp., antibiotic susceptibility, antibiotic cross-resistance

# P427 - 741: THE FREQUENCY OF BACTERIAL AGENT IN NASOLACRIMAL DUCT OBSTRUCTION IN OPHTHALMIC CLINICS AT KASHAN

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**Background and Aim:** Serious complications of acute dacryocystitis are uncommon but life-threatening such as orbital cellulitis, potential to development to meningitis or cavernous sinus thrombosis. The purpose of this study was to determine the frequency of bacterial agent in nasolacrimal duct obstruction in ophthalmic clinics at Kashan.

**Methods:** A cross - sectional study was undertaken including twenty- five patients who presented to the ophthalmic clinics from Mars to Jun 2017 in Kashan. One swab of duct discharge was inoculated into TSB broth for 24 hours and then cultured on Blood Agar, MaCconky Agar and Chocolate Agar plates. Then colonies were studied for identification of the microorganisms by various biochemical routine tests.

**Results:** A total of twenty- five patients, seventeen (68%) and eight (28%) cases were men and women, respectively. Fourteen (56%) samples of infants and eleven (44%) samples of adults were isolated. The dominant isolates were Staphylococcus epidermidis 13, Diphtheroid 3, Klebsiella pneumoniae 2, coagulase-negative staphylococci (CoNS) 1, Burkholderia 1, Staphylococcus aureus 1, Moraxela 1, Klebsiella oxytoka 1, Streptococcal alpha hemolytic were each accounted 1 isolation rate were obtained. In addition, 5 of the cultures were mixed with other bacteria including Diphtheroid, alpha hemolytic streptococci, and Klebsiella pneumonia.

**Conclusion:** Staphylococcus epidermidis are the most frequently isolated bacteria. Though the information resultant from this study was very important, additional studies encompassing viral, fungal, parasitic and anaerobic bacterial cause are important to better define the range and relative incidence of pathogens causing dacryocystitis. Microbiological analysis is obligatory for the selection of a specific antimicrobial therapy.

**Keywords:** Dacryocystitis, nasolacrimal duct, lacrimal sac, Kashan, Ophthalmic Assistants

# P428 - 744: MOLECULAR DETECTION OF B-LACTAMASE AND INTEGRON GENES IN CLINICAL STRAINS OF KLEBSIELLA PNEUMONIAE BY MULTIPLEX POLYMERASE CHAIN REACTION

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**Background and Aim:** Infections caused by β-lactamase-producing gram-negative bacteria, such as Klebsiella pneumoniae, are increasing globally with high morbidity and mortality. The aim of the current study was to determine antimicrobial susceptibility patterns and the prevalence of antibiotic resistance genes (β-lactamase and integron genes) using multiplex PCR.

**Methods:** One-hundred K. pneumoniae isolates were collected from different clinical samples. Antibiotic susceptibility testing was performed with thirteen different antibiotics. Multiplex-PCR was used to detect β-lactamase (blaTEM, blaCTX-M, blaSHV, blaVEB, blaPER, blaGES, blaVIM, blaIMP, blaOXA, and blaKPC) and integron genes (int I, int II, and int III).

**Results:** The highest and lowest rate of resistance was exhibited against amikacin (93%) and imipenem (8%), respectively. The frequency of β-lactamase-positive K. pneumoniae was 37%, and the prevalence of the blaTEM, blaCTX-M, blaSHV, blaVEB, blaPER, blaGES, blaVIM, blaIMP, blaOXA, and blaKPC genes was 38%, 24%, 19%, 12%, 6%, 11%, 33%, 0%, 28%, and 23%, respectively. Of the 100 isolates, eight (8%) were positive for class I integrons; however, class II and III integrons were not detected in any of the strains.

**Conclusion:** These results indicate co-carriage of a number of β-lactamase genes and antibiotic resistance integrons on the same plasmids harboring multi-drug resistance genes. It seems that these properties help to decrease treatment complications due to resistant bacterial infections by rapid detection, infection-control programs and prevention of transmission of drug resistance.

**Keywords:** Klebsiella pneumoniae, β-lactamase, Integrons, Drug resistance, Multiplex PCR

# P429 - 745: MOLECULAR INVESTIGATION OF VIRULENCE FACTORS OF BRUCELLA MELITENSIS AND BRUCELLA ABORTUS STRAINS ISOLATED FROM CLINICAL AND NON-CLINICAL SAMPLES

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**Background and Aim:** Brucella is zoonotic pathogen that induces abortion and sterility in domestic mammals and chronic infections in humans called Malta fever. It is a facultative intracellular potential pathogen with high infectivity. The virulence of Brucella is dependent upon its potential virulence factors such as enzymes and cell envelope associated virulence genes. The aim of this study was to investigate the Brucella virulence factors among strains isolated from humans and animals in different parts of Iran.

**Methods:** Seventy eight strains of Brucella species isolated from suspected human and animal cases from several provinces of Iran during 2015-2016 and identified by phenotypic and molecular methods. The multiplex-PCR (M-PCR) assay was performed in order to detect the ure, wbkA, omp19, mviN, manA and perA genes by using gene specific primers.

**Results:** Out of 78 isolates of Brucella spp., 57 (73%) and 21 (27%) isolates were detected as B. melitensis and B. abortus, respectively, by molecular method. The relative frequency of virulence genes ure, wbkA, omp19, mviN, manA and perA were 74.4%, 89.7%, 93.6%, 94.9%, 100% and 92.3%, respectively.

**Conclusion:** Our results indicate that the most of Brucella strains isolated from this region possess high percent of virulence factor genes (ure, wbkA, omp19, mviN, manA and perA) in their genome. So, each step of infection can be mediated by a number of virulence factors and each strain may have a unique combination of these factors that affected the rate of bacterial pathogenesis.

**Keywords:** Brucella melitensis, Brucella abortus, Brucellosis, Virulence factors, Multiplex-PCR

# P430 - 756: GENETIC DIVERSITY AND METHICILLIN RESISTANCE IN STAPHYLOCOCCUS AUREUS ISOLATES FROM BUFFALOES WITH MASTITIS

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**Background and Aim:** Staphylococcus aureus or methicillin-resistant Staphylococcus aureus (MRSA) has been an important pathogen causing mastitis in buffalo. spa gene typing is one of the important methods for determining the Staphylococcus aureus strains.The aim of this study was to determine strains of S.aureus isolated from buffaloes with mastitis by using spa gene and also, detect methicillin resistance strains in those isolates.

**Methods:** Milk samples were collected from buffalos with mastitis infection around of the Urmia city. In total, 92 isolates of S. aureus were detected and confirmed by biochemical tests and molecular method (nuc gene). PCR of spa and mecA genes was used for determining gene typing and methicillin resistance of isolates.

**Results:** According to the results of spa gene PCR, eight different patterns of strains were identified. In this study only 2 of 92 isolates of S.aureus were determined by PCR to be mecA gene positive.

**Conclusion:** The finding of this study indicates that spa gene typing is suitable to identify S. aureus strains. Also, indicate that different strains of S. aureus can be cause mastitis in buffaloes. Moreover, the prevalence of methicillin resistant S. aureus carriage is low for buffaloes with mastitis.

**Keywords:** Staphylococcus aureus, spa gene typing, mecA, buffalo

# P431 - 757: DEVELOPMENT OF A LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) ASSAY FOR DETECTION OF PSEUDOMONAS AERUGINOSA IN CLINICAL SAMPLES FROM ANIMALS AND HUMAN

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**Background and Aim:** Pseudomonas aeruginosa is an important opportunistic pathogen in animals and human and also responsible of hospital-acquired infections. The importance of treating pseudomonas infections is due to high resistance to antibiotics. Successful treating of infections relies on accurate and rapid identification methods.The aim of this study was to compare the PCR and LAMP techniques for detection of P.aeruginosa and introduce the LAMP technique as a precision instrument with a high sensitivity for the rapid diagnosis of P.aeruginosa.

**Methods:** 180 samples collected from urine, feces, wounds, sputum, skin and tissues of different animals (including horses, poultry, cattle, sheep and dogs) and humans. The bacteria were isolated and confirmed using microbiological methods. The genomic DNAs were extracted to determine the sensitivity and specificity of PCR and LAMP assays using the primers designed for oprL gene.

**Results:** 20 positive samples of P.aeruginosa were detected by phenotypic tests. All isolates were detected positive with both PCR and LAMP techniques. PCR detected DNA concentration in up to 1ng, while the LAMP technique was able to detect 100fg in 25 minutes at a constant temperature of 65 °c. Both techniques differentiated P.aeruginosa from other pseudomonas and other bacteria.

**Conclusion:** The accuracy, sensitivity and speed for LAMP technique was shown to be significantly higher than PCR, suggesting potential superiority of LAMP assay for rapid diagnosis of P.aeruginosa in clinical samples.

**Keywords:** PCR, LAMP, Pseudomonas aeruginosa

# P432 - 767: COMPARATIVE VIRULOTYPING AND PHYLOGENOMICS OF ESCHERICHIA COLI ISOLATES FROM URINE SAMPLES OF MEN AND WOMEN SUFFERING URINARY TRACT INFECTIONS

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**Background and Aim:** Escherichia coli strains are common pathogens that can cause urinary tract infections (UTIs). They are classified into phylogroups based on three genetic markers: chuA, yjaA, and TspE4.C2. The E. coli strains that cause UTIs possess several genes that encode urovirulent factors. The aim of this study was to assess the genetic variations of detected E. coli phylogroups in male and female UTI patients with the distribution of certain virulence factors among the phylogroups.

**Methods:** In the present study, 160 Uropathogenic Escherichia coli isolates (100 from women and 60 from men) were assigned to phylogroups/types and some extraintestinal virulence factors were detected within them by Multiplex-PCR.

**Results:** The isolates from women and men were predominantly distributed within phylogroup B2 and D, respectively. The presence of D2 phylotype was higher in men isolates than women, significantly (P=0.045). The prevalence of iucD, hly, papEF and sfa/focDE virulence genes within E. coli isolates of male and female hosts showed that in male isolates papEF and sfa/focDE are more prevalent in B2 group than D, significantly (P=0.048; P=0.035). About the female isolates, it was demonstrated that the prevalence of hly in B2 group is significantly higher than D (P=0.034). Also it was demonstrated that papEF is more prevalent in male isolates (P = 0.035) whereas sfa/focDE is more prevalent in female strains (P = 0.006), significantly.

**Conclusion:** This study highlighted different features of E. coli genotypes from phylogenetic and virulence point of view implicated in urinary tract infections in both human genders.

**Keywords:** Uropathogenic E. coli, Phylogenomics, Virulotyping, Men and Women UTI's

# P433 - 769: INVESTIGATION, DETECTION AND GENOTYPING OF CLINICAL SAMPLES OF ACINETOBACTER BAUMANNII USING PCR AND ERIC-PCR.

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**Background and Aim:** Acinetobacter baumannii is one of the most important causes of nosocomial infections. Early and accurate identification of these infections is very important to prevent the spread of them and to treat them subsequently. The most common way to separate them are including biochemical tests and laboratory diagnosis methods which are usually time consuming, expensive and lacking in precision. Molecular techniques such as PCR and ERIC-PCR method to identify and genotyping the microbial species are beneficial.

**Methods:** In this study, during two months, 140 diagnosed isolates of A. baumannii were collected from two medical laboratories in a burn hospital and a general hospital in Tehran. These samples were taken from patients with infections related to clinical samples including blood, urine, respiratory secretions and exudates. The definitive identification was done by PCR and Sequencing the OXA-51 gene. Also using the ERIC-PCR technique, the genetic diversity of confirmed strains were checked.

**Results:** Molecular study established that 95/7% of 134 isolates which had been identified in clinical laboratories were exactly as A. baumannii and 6 isolates weren't approved genetically. Based on the results of molecular typing of the isolates, 18 genetic patterns were identified.

**Conclusion:** Molecular techniques such as PCR method for identifying microbial species and ERIC-PCR to study the genetic diversity of clinical isolates of A. Baumannii, have more accuracy and is done more quickly than phonotypical methods.

**Keywords:** A. Baumannii, OXA-51, PCR, ERIC-PCR

# P434 - 782: PREVALENCE OF CLASS I AND II INTEGRONS AMONG UROPATHOGENIC ESCHERICHIA COLI CLINICAL ISOLATES

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**Background and Aim:** Escherichia coli is the main factor of urinary tract infections (UTI). Integrons are genetic elements that play an important role in dissemination and accumulation of resistance genes of multidrug resistance in bacteria. The aim of the present study was to determine the antibiotic resistant profile, frequency of integrin gene (Classes 1,2) among Escherichia coli isolated from urinary tract infections.

**Methods:** One hundred clinical isolates Escherichia coli were collected from Burojerd country. All isolates were identified using standard laboratory methods. Antimicrobial susceptibility profiles were determinal against the selected antimicrobial using the standard disk diffusion methods according to clinical and Laboratory Standard Institute (CLSI) guideline. PCR assay was preformed the association between integron carriage and antimicrobial susceptibility patterns.

**Results:** The highest rate of antibiotic resistance in Escherichia coli isolates was fond in Amoxycilin (72%), Ciprofloxacin (69%), Nalidaxan (55%), Tetracyclin (51%). 31% of E.coli isolates carried class 1 integrons, whereas class 2 integrons were found in 21% of E.coli. Analisis of data relevaled a significant association between antibiotics Trimethoprim+ sulfamethazole ($P<0.001$), Nalidaxan ($P<0.01$), Tetracyclin ($P<0.005$), Amoxycilin ($P<0.02$) and presence of class 1 integron.

**Conclusion:** The high prevalence of class 1 integron in E. coli isolates associated with the high rate of antibiotic resistant indicate that may be integrons play an important role in facilitating the spread of antimicrobial resistance in this region. Due to the presence of a significant relationship of integron class 1, In resistant strains, Applying appropriate infection control and relevant ways to prevent further spread of hospital treatment is necessary.

**Keywords:** Escherichia coli, Multidrug resistance, Integron, Urinary Tract Infections

# P435 - 784: DEVELOPING AND BIOSYNTHESIS OF SPECIFIC EASE-OF-USE NANOPROBES FOR DIRECT DIAGNOSIS OF A NEGLECTED OPPORTUNISTIC PATHOGEN

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**Background and Aim:** Morganella morganii is a neglected opportunistic pathogen hosting normal microbiota of human intestine which is able to cause various nosocomial and hospital infections. Detection of the bacteria is mainly culture-based and rely on differential biochemical tests. Therefore, developing a simple rapid point-of-care method using nucleic acid testing (NAT) is of high demand.

**Methods:** Whole genome investigation of M. morganii was performed and various gene candidates were selected for specific detection of the bacteria. Adhesin ،enterobactin transport protein FepE ،PhoP regulon feedback inhibition membrane protein MgrB ،MU9 ، O antigen ligase ،ferric enterobactin transport protein FepE and 16SrRNA genes are among the candidates. Complete shotgun gene sequences were accessed, blasted and aligned with other closely related (including Enterobacteriaceae family) and non-related bacteria to ensure high specificity. Finally, the genes were divided and analyzed in different short regions to find appropriate site for designing hybridization probes.

**Results:** Complete analysis resulted in selection of a specific region in surface presentation of antigens protein coding gene. Two probes of 31 bp in the region 29453-29483 and 29377- 29407 of M. morganii subsp. morganii KT were designed according to requirements for probe design protocols so that they provide high homogeneity with Morganella species and high heterogeneity with other related and non-related bacteria. The designed probes were synthesized and applied for gold nanoprobe- based detection of the bacteria.

**Conclusion:** Since the proximity of hybridization sequences in the specific probes was carefully optimized, they could be applied to amplification-based or direct unamplified NAT detection approaches.

**Keywords:** Morganella morganii, Molecular detection, Nanoprobe, Nucleic acid testing (NAT), Nosocomial infection

# P436 - 814: DESIGNING AND CONSTRUCTING AN ELECTROCHEMICAL GENOSENSOR WITH HIGH SENSITIVITY FOR THE RAPID DETECTION OF ESCHERICHIA COLI

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**Background and Aim:** Escherichia coli (E.coli) is a specific indicator for recognition water pollution. The presence of this microorganism in water samples reliably reflects fecal contamination and it can have harmful subsequences to human health. Therefore, there is a great requisite for the development of fast, simple and sensitive methods for recognition and quantification of E. coli in water samples. In this work, we applied the sandwich strategy assay to design an electrochemical genosensor based on the double DNA hybridization.

**Methods:** Firstly, the aniline monomers were electropolymerized on the on the surface of screen-printed carbon electrode (SPCE) by cyclic voltammetry(CV) electrochemical method. In the next step, gold nanoparticles (AuNPs) were electrodeposited on the surface of polyaniline (PANI) modified SPCE. Then, avidin proteins were fixed onto the PANI/ AuNPs-modified SPCE surface with forming the covalent bond by using N-ethyl-N′-(3-dimethylaminopropyl) carbodiimide (EDC) and N-hydroxysuccinimide (NHS). Next, the biotinylated capture probe was immobilized onto the avidin-modified SPCE surface. Subsequently, hybridization solution including E.coli bacteria DNA sequence and dig-labeled detector probe was added to the surface electrode. In the end, after dropping the anti-dig horseradish peroxidase (HRP) enzyme, the electrochemical signal was generated via enzymatic reaction performance and electron-producer on the SPCE surface. All of the steps were validated by atomic force microscopy (AFM) and electrochemical impedance spectroscopy (EIS).

**Results:** This genosensor has represented a detection limit of 0.02 fM.

**Conclusion:** It can be concluded that designing genosensor is a useful device for monitoring the water quality and fecal contamination - related infections diseases.

**Keywords:** Escherichia coli, genosensor, polyaniline, gold nanoparticles, fecal contamination

## P437 - 839: VBNC BACTERIA AND DIAGNOSTIC PROBLEMS

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**Background and Aim:** The word of Viable but Non- Culturable (VBNC) state had introduced in 1982. This word demonstrates that the pathogen and non-pathogenic Gram negative and gram positive bacteria can enter VBNC state which can retrieve their metabolic activities and duration of the disease without detectable. Thus, the VBNCs bacteria are very important in general health, sterility of drinking water, pharmaceuticals and food industries. The aim of this review study was a deep assay on the VBNC bacterium and thier diagnostic problems.

**Methods:** In this review paper we searched in different database such as: pubmed, web of science (ISI), Scopus, ISC, Science Direct, Google Scholar and Magiran. In our study we consider about 50 papers from above-mentioned databases.

**Results:** The cumulative results indicate, entering to VBNC state is increasing. Escherichia coli, Vibrio cholera and Helicobacter pillory as examples of VBNC bacteria. VBNC state is response to temperature, osmotic pressure, nutrition, oxygen concentration and ecological contrition of the host. Once bacterium enters to VBNC state their phenotype and genotype have altered. These changes included changes in cell membrane structure, reduced in shape and convert to cocci from bacillus, reduced in food absorption, reduced in Macromolecule synthesis and so on. The best diagnostic methods for VBNCs are cytological and Molecular methods.

**Conclusion:** Diagnostic VBNC is very important, for this purpose. It is necessary to set up flow cytometry and cytological method for count the live cells in tissues. And also design the sensitive probe to energy measurement and acid nucleic base molecular method.

**Keywords:** VBNC, Diagnostic, Molecular Method, Cytological method

## P438 - 922: DETECTION OF CATTLE BRUCELLOSIS BY PCR AND IELISA

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**Background and Aim:** Brucellosis is a zoonotic infectious disease, and an important public health problem in many parts of the world, especially in the Middle East region. Brucellosis is endemic in Iran. The aim of this study was to detection of cattle brucellosis by PCR and iELISA.

**Methods:** This cross-sectional study was carried out on 92 cattle suspected to be infected or had a history of brucellosis from Shahryar region (Tehran, Iran). Also these animals had no history of vaccination against brucellosis. The blood specimens were collected from cattle (vaccinated and unvaccinated). The brucellosis diagnosis was established by polymerase chain reaction (PCR) and iELISA methods.

**Results:** Out of 92 specimens, 76 (82.6%) were positive by polymerase chain reaction. In this investigation frequency of brucellosis by using iELISA method was 86.2% (n=76) respectively. Thirty nine (100%) iELISA-positive specimens displayed positive reaction via 2ME. Among the 76 (82.6%) iELISA-positive samples, 37 (69.8%) cases were negative by 2ME. Among the 76 (82.6%) specimens that were positive by iELISA, 46 cases were positive by wright.

**Conclusion:** Prevention of brucellosis mainly involves education, food control and personal hygiene. Efforts should be made by responsible authorities to make practical phones. Cattle herds have to be included in national programs for control and eradication of brucellosis in endemic countries such as Iran.

**Keywords:** Cattle, Brucellosis, Polymerase chain reaction

# P439 - 947: PREVALENCE OF HUMAN PAPILLOMA VIRUS IN PATIENTS WITH COLORECTAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Human papillomavirus (HPV) is one of the most current carcinogenic viruses in different malignancy in male and female worldwide. Although HPV is associated with gynecologic malignancy, but it is one of the important environmental factors which may lead to colorectal cancer (CRC). We conducted a systematic review and meta-analysis study to estimate the prevalence of HPV infection in patients with CRC.

**Methods:** Prevalence of HPV in patients with CRC was determined from 2001-2016 using from databases PubMed, Web of Science, Embase, Cochrane Library, Google Scholar, Iranmedex, and Scientific Information Database (SID). Analysis was performed by Comprehensive Meta-Analysis (V2.0, Biostat) software. Random effects models were used, taking into account the possibility of heterogeneity between studies, which was tested with the Cochran's Q-statistic.

**Results:** The meta-analyses showed that the prevalence of HPV infections in CRC was 33.7 % [95% confidence interval (95% CI) 28.4-39.5] totally. The further stratified analyses indicated that the prevalence of HPV in CRC was more in Europe countries than Asia and America countries.

**Conclusion:** Since high rates of HPV infections is a major concern in sexual transmitted diseases in in the world, control of high-risk behaviors, vaccination, screening and HPV subtyping can be useful to control of HPV infections.

**Keywords:** Human Papilloma Virus, HPV, Colorectal Cancer, Meta-analysis

# P440 - 968: MOLECULAR DETECTION OF HELICOBACTER PYLORI IN PROSTATE CANCER AND HYPERPLASIA PATIENTS COMPARED WITH HEALTHY PEOPLE

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**Background and Aim:** To determine whether Helicobacter pylori (H. pylori) is detectable in both benign prostatic hyperplasia (BPH) and prostate cancer (PCa). Epidemiological studies have shown significant associations between infective chronic prostatitis and prostatic carcinoma. Many bacteria have been found in the prostate of patients with chronic prostatitis, BPH, and PCa.

**Methods:** Tissue samples were obtained from transrectal biopsies of the prostate in the case of BPH (n=70) ,PCa ((n=120) stage I, II, III, IV) and healthy (n=70) ,respectively. Detection of H. pylori (16s rDNA) in prostate tissue from patients with BPH and PCa was performed using PCR, and the results were confirmed by DNA sequencing.

**Results:** Of all the samples, 34 samples were positive in PCR testing, of which 18 were identified with 98% of the similarity of Helicobacter pylori. Our results showed that there is a significant relationship between the presence of Helicobacter pylori among healthy people and those with prostate and hyperplasia, but there is no association between PCa and BPH.

**Conclusion:** This study has revealed that H. pylori exists in the prostate. Further studies are needed to clarify its role in contributing to the development of H. pylori and prostate cancer.

**Keywords:** Helicobacter pylori, prostate cancer, PCa, BPH

# P441 - 985: DESIGN AND DEVELOPMENT OF A TAQMAN REAL-TIME PCR ASSAY FOR DETECTION AND QUANTIFICATION OF HIV-1

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**Background and Aim:** Human immunodeficiency virus type 1 (HIV-1) is one of the most important infectious agents that its transmission during the window period in blood transfusion centers is a global problem. Therefore, on time, precise and sensitive method for detection of these viruses in the blood of infected people is a real challenge. The aim of this study was to design a sensitive and accurate assay based on Real-time PCR to detect HIV-1 in blood samples.

**Methods:** The sequences of HIV-1 genomes were received from NCBI and Nos Alamos databases and aligned to find the most conserved region for primer pairs and probe. The final primers and probe were designed for a 200bp region in INT gene of HIV-1. In-vitro transcribed RNA was used for standard preparation in analytical sensitivity determination. In addition, bioinformatics analysis by BLAST was performed to determine the analytical specificity. For clinical specificity, a panel of different viral genome samples and healthy individual genomes were recruited.

**Results:** The results showed that this method is sensitive to detect at least 100 copies of HIV-1 RNA/mL. In addition, the linearity range was 10-109 copies/mL. No healthy controls showed positive results, so the specificity of assay was 100%. The inter and intra-assay results showed high reproducibility of this assay.

**Conclusion:** By applying this assay, we can detect infected individuals early in window period before seroconversion and appearance of antibodies.

**Keywords:** HIV-1, TaqMan Real-time PCR assay, quantification

# P442 - 994: RAPID PCR DETECTION OF MYCOPLASMA SPP MATERNAL INFECTION.

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**Background and Aim:** Maternal infections are the most important threats to the health of the fetus in humans which is created by bacterial and fungus. One of the important bacterial agents is Mycoplasma spp. that accurate and correct detection of these agents was performed in this study by PCR test on umbilical cord blood samples.

**Methods:** This study was performed on100 umbilical cord blood samples from cesarean's patients of hospital. DNA samples were extracted by DNG plus method and amplified by PCR technique. PCR test was optimized and then limit of detection and specificity test were performed.

**Results:** Optimized PCR test with 715bp amplicon amplified and observed on 1.5% agarose gel electrophoresis. Specificity test showed 100% dedicated of these primers .Limit of detection was 100 copy /reaction. 5 samples (5%) were positive for Mycoplasma spp.

**Conclusion:** Maternal infections can be significant implications in fetus by molecular methods such as PCR that can provide a good prediction for quick identification of important factors in maternal infections such as Mycoplasma spp.

**Keywords:** Umbilical cord blood ,Maternal infection, Mycoplasma spp, Detection

# P443 - 1023: EVALUATING THE FREQUENCY OF BLOOD CULTURE POSITIVE RATE IN VALI-E-ASR HOSPITAL IN BIRJAND

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**Background and Aim:** Sepsis is a potentially life-threatening condition and therefore considered as a medical emergency. The aim of this study was to evaluate the incidence of sepsis among in patients and to identify the organisms causing sepsis.

**Methods:** This cross sectional study was conducted on a population of in patients admitted in Vali-e-Asr hospital, Birjand, Iran during October 2015 to October 2016with the diagnosis of sepsis.All blood samples were cultured. Identification was conducted by biochemical tests for positive cultures. Some part of the data were also collected from archived patient records. The data were analyzed using SPSS, v.18 software. Frequencies and proportions in categorical data were calculated. Appropriate 95% Confidence Intervals (CI) were calculated for prevalence proportional data. Fisher exact test was applied.

**Results:** In this study, blood samples of 8980 in-patients were cultured and 353(3.9%) sample was shown to be positive. The positives were included 47.1% females and 52.9% males. The highest of patients with blood positive cultures were found in groups: over 60 years old(33.5%) and 0-1years (24.0 %). The most types of isolated bacteria were E. coli, 29.7%(in 107 patients), Staphylococcus epidermidis, 25.2% (in 89patients),Pseudomonas aeruginosa, 12.7 % (in 45patients), Klebsiella spp, 6.8% (in 24patients) and Streptococcus pneumonia, 6.8% (in 24patients). Statistical analysis by Fisher exact test showed a significant relationship between the type of bacteria and the age ($P<0.001$) but there was no significant relationship between the type of bacteria and the gender ($P=0.227$).

**Conclusion:** Age seems to be significant criteria in the occurrence of sepsis and in the incidence of its causative agents.

**Keywords:** Sepsis, Bacterial agent, Age, Blood culture

# P444 - 1028: COAGULASE GENE TYPING IN CLINICAL ISOLATES OF STAPHYLOCOCCUS AUREUS, THE IMPORTANCE OF C5 COA TYPE IN ISOLATES WITH TETRACYCLINE AND AMINOGLYCOSIDE RESISTANCE ENCODED GENES

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**Background and Aim:** The aims of the present study were to determine the, Aminoglycoside modifying enzymes (AMEs) encoded genes, tetracycline resistance genes, and the coa based typing of Staphylococcus aureus isolates in southwest of Iran.

**Methods:** Antimicrobial susceptibility of isolates was carried out by Disk Agar Diffusion methods. Two sets of Multiplex PCR mixture were used for detection of AME genes and tet genes. All of the isolates were typed with coagulase gene typing method. Of the 121 isolates, 29.75% and 47.93% were resistant to at least one aminoglycosides and tetracyclines respectively.

**Results:** The aac(6')-Ie-aph(2'')was the most frequent gene (97.22%), and the aph (3')-IIIa and ant (4')-Ia genes were detected in 61.11% and 11.11% of aminoglycosoide resistant isolates respectively. The tetK and tetM genes were detected in 82.75% and 56.9% of tetracycline resistant isolates respectively. Overall 31.4% of isolates were MRSA. Totally 17 distinct coa gene RFLP patterns; numbered C1 to C17, were observed. The C5 was the most frequent coa type with 31 isolates.

**Conclusion:** The aac(6')-Ie-aph(2'') and the aph (3')-IIIa genes was the most important genes contributed to the aminoglycosides resistance, while resistance to tetracyclines were mediated by tetK and tetM genes. Interestingly all of the S. aureus with C5 as the most prevalent coa-type were resistant to at least one of the aminoglycoside antibiotics and tetracycline simultaneously. Moreover, 30 out of 31 isolates with this coa type were MRSA indicating the importance of the C5 coa-type in MRSA strains and also in isolates that were resistant to aminoglycosides and tetracycline.

**Keywords:** Staphylococcus aureus, Aminoglycoside resistance, tetracycline resistance, Coagulase gene typing

# P445 - 1065: DETERMINATION OF INTESTINAL ESCHERICHIA COLI PATHOTYPES FREQUENCY IN TEHRAN PROVINCE BY PCR

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**Background and Aim:** Escherichia coli (E.coli) is an important member of the normal intestinal microflora for mammals, including humans.Diarrheagenic Escherichia coli (DEC) is an emerging agent among pathogen that cause diarrhea.E.coli categorized into six major groups according to virulence factor profiles, severity of clinical manifestations and prognosis.that diarrheagenic E. coli such as enterohaemorrhagic E. coli enteroaggregative E. coli enteropathogenic E. coli enteroinvasiveE.coli enterotoxigenic E. coli and shiga toxin producing E.coli strain are among the most prevalent causative agents in acute diarrhea.

**Methods:** Totaly 325 isoltes (5 colonies of each 65 samples) were collected from patients with diarrhea in Tehran province of Iran, during 2013. E.coli strains were isolated by traditional culture and standard biochemical identification test ,the diarrheagenic genes isolated by polymerase chain reaction (PCR) technique to detect presence of virulence genes.eae, stx1 and stx2 for EHEC,bfp and eae for EPEC,LT and ST for ETEC,AA for EAEC,invE for EIEC,STX1 or STX2 for STEC.

**Results:** 50 samples of 65 (77%) were identified E.coli by traditional cultures and biochemical identification test. EPEC 5(7.7%), STEC 27(41.5%), ETEC 1(1.5%), EAEC 3(4.6%) and non pathogenic E.coli 14(21.5%) were identified using PCR technic.

**Conclusion:** STEC mostly affected children less than 5 years old but EPEC and ETEC and EAEC were seen in any age groups.it seems that in Tehran province , prevalence of these pathothypes are less than other regions that have hot or dryer weather. on the otherhand the prevalence of different pathotypes was variable and some pathotypes were more prevalent than others.It could be suggested to pay serological studies for the better treatment and access to vaccine.

**Keywords:** Diarrhea, escherichia coli, polymerase chain reaction, virulence genes

## P446 - 1118: MOLECULAR TYPING OF SALMONELLAISOLATES BY REP-PCR

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**Background and Aim:** Salmonella species is an important food-borne pathogen responsible for disease in animals and humans. It has been theleading cause of many outbreaks and infections around the worldand is considered as one of the major causes of human gastroenteritis worldwide. The accurate sub-typing of Salmonella isolates is essential for epidemiological investigations and surveillance of Salmonella infections.

**Methods:** A total of 74 Salmonella isolates from cattle and poultry are identified using the Kauffman–Whiteserotyping scheme.All of the isolate, representing 11serovars, were analyzed using repetitive extragenic palindromic (Rep-PCR) method. For Rep-PCR, the primers REP 1 (5-IIIGCGCCGICATCAGGC-3) and REP 2 (5-ACGTCTTATCAGGCCTAC-3) were used.

**Results:** PCR fingerprints from gels were interpreted visually and DNA patterns differing by one or more bands were assigned a profile type. Gel.J software (version 2.0) was used to analyze the gel images and to generate dendogram. According to the dendrogram with discriminative power of 80%, strains classified to 11cluster and one single tone.

**Conclusion:** Rep analysis was able to successfully group and differentiate Salmonella isolates from cattle and poultry and showed that there was correlation between the profile types and animal species.

**Keywords:** Salmonella, Rep-PCR, Molecular typing

# P447 - 1127: LOOP-MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) ASSAY AS A CONFIRMATORY TOOLS FOR ENTEROCOCCUS SPECIES

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**Background and Aim:** Enterococci are responsible for nosocomial and urinary tracts infections and they seems to be a major public health problem in hospitals. According to their importance in hospitals, rapid detection of organism is necessary. Loop-mediated isothermal amplification (LAMP) assay is a fast-acting method for detection of bacterial pathogens. In the present study, we developed a LAMP assay for rapid and accurate detection of E. faecalis and E.faecium.

**Methods:** The study was conducted with a total of 57 isolates of Enterococci among UTI patients. Enterococcus species were identified using conventional microbiological methods. A set of specific primers was designed for E. faecalis and E.faecium targeting mtlf and efmc genes, respectively. LAMP assays were carried out using primers, dNTPs, MgSO4, Bsn DNA polymerase and templates. The assay was used as to confirm a total of 57 clinical isolates of Enterococci species.

**Results:** The results of phenotypic testing showed that from the total of 57 isolated Enterococcus strains 49 (85.9%) were recognized as E. faecalis and 8 (14.1%) of them were E. faecium. Optimal temperature and time for the LAMP assay were 63°C and 1h, respectively. All of 57 Enterococci isolates were identified as Enterococcus faecalis by the LAMP assay.

**Conclusion:** The LAMP assay is useful as a confirmatory assay of Enterococci spp. and may be useful in medical centers.

**Keywords:** E. faecalis, E.faecium, Loop-mediated isothermal amplification assay (LAMP)

# P448 - 1135: DETERMINATION OF AFLATOXIN BIOSYNTHESIS GENES IN AFLATOXIGENIC SPECIES OF ASPERGILLUS BY PCR METHOD

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**Background and Aim:** Aflatoxin is carcinogenic metabolites that produced by a number of Aspergillus species. This study aims to study the effect of aflatoxin genes aflP and aflQ on aflatoxigenic species of A. flavus and A. parasiticus in cattle feed.

**Methods:** To conduct the study, 121 samples were collected and evaluated based on macroscopic and microscopic methods. Moreover, PCR technique was also used to undertake a molecular examination of the isolated Aspergillus. Finally, their aflatoxin content was evaluated based on High Performance Liquid Chromatography.

**Results:** The results indicate that 55.37% of 121 samples of the cattle feeds contaminated by Aspergillus fungi. Among these isolated samples, 67.16% has aflP and 70.14% has aflQ, and the findings of HPLC also confirm that aflatoxigenic isolates are more common than their non-aflatoxigenic counterparts. Among 10 species of A. flavus and A. parasiticus collected from cattle feeds, wheat bran produced the highest amount of aflatoxin, in which aflatoxin B1 accounted for the highest amount and aflatoxins G1 and G2 accounted for the least amount. It is noteworthy that aflatoxin B1 was produced in all species while aflatoxin G2 was not produced. Aflatoxins B2 and G1 were produced in all species of A. parasiticus and some species of A. flavus.

**Conclusion:** Controlling cattle feeds contaminated by Aspergillus fungi can secure them against aflatoxin contamination and prevent them from entering the human and animal health cycle.

**Keywords:** Aspergillus, aflP , aflQ , PCR

# P449 - 1146: EVALUATION OF SPECIFIC ANTIBODY AGAINST MYCOBACTERIUM TUBERCULOSIS RECOMBINANT PROTEIN FOR EARLY DIAGNOSIS OF TUBERCULOSIS

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**Background and Aim:** According to improvement of tuberculosis serodiagnostic methods, the present study designed for evaluation of the humoral immune responses against Mycobacterium tuberculosis ESAT-6: CFP-10 fusion protein in different tuberculosis (TB) patients. Furthermore the value of developed protocol has been evaluated for early diagnosis or treatment outcome of patients.

**Methods:** The levels of specific antibody against E6-C10 fusion protein have been measured by indirect ELISA method in the sera collected from 22 newly diagnosed, untreated TB patients and compare with TB treated and multi-drug resistant (MDR) patients. The control groups composed of non-TB pulmonary patients and healthy subjects with tuberculin skin test (TST) positive and negative results.

**Results:** The results revealed the increased levels of anti E6-C10 in all of the smear positive tuberculosis patients. However, the antibody was significantly elevated in recently diagnosed active tuberculosis patients in compare to treated or MDR patients. Importantly, the levels of antibody was highly corresponding with the infection intensity which revealed by smear results.

**Conclusion:** These observations support the usefulness and diagnostic value of E6-C10 fusion protein for rapid diagnosis and treatment outcome of TB infection. However, further investigations in larger population and different regimen treated patients could confirm this hypothesis.

**Keywords:** Tuberculosis, ESAT-6, CFP-10, ELISA, treatment

# P450 - 1149: DESIGN AND APPLICATION OF A PCR ASSAY FOR DETECTION OF TICK BORNE RELAPSING FEVER

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**Background and Aim:** Tick Borne Relapsing Fever (TBRF) caused by Borrelia microti is transmitted via bites of the soft tick Ornithodoros eraticuse that primarily inhabits caves and small niches. TBRF is a en¬demic disease in Iran; >1,400 cases were confirmed in 19 provinces during 1997–2006.

**Methods:** Blood samples containing spirochete Borrelia microti from mice were obtained from Pasteur Institute Tehran and DNA was purified by using a commercial DNA extraction kit. In this study, we have designed forward and reverse primers using glpQ gene sequence. A part of glpQ gene was amplified by PCR and the PCR product cloned into the pTZ57R/T vector and the constructed plasmid was transformed into Top10F/ E.coli (as positive control). Analytical specificity and sensitivity (LOD) of the PCR were achieved.

**Results:** The results demonstrated that the primers against glpQ gene amplified a 219 bp fragment. Analytical sensitivity of PCR test was found to be 9×109 copies of the gene. The PCR assay was highly specific and no amplification were observed from the non-Borrelia organisms.

**Conclusion:** The glpQ-PCR can be used as a useful tool for detection of relapsing fever. Designed PCR has a high sensitivity compared to other methods for detection of TBRF.

**Keywords:** TBRF, glpQ, PCR, Borrelia microti

Food Microbiology

# P451 - 17: THE EFFECT OF AQUEOUS AND METHANOL EXTRACTS OF LAVENDER AGAINST GREEN MOLD ORANGE PATHOGEN CAUSED BY PENICILLIUM DIGITATUM

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**Background and Aim:** Losses because of the postharvest disease can occur at any time during postharvest handling, from harvest to consumption. Synthetic fungicides are the primary tools to control postharvest diseases. There is public concern over the accumulation of chemical residues in the food chain and environmental safety. Alternative strategies have included the search for new types of fungicides.¬The use of plant extract is now emerging as one of the prime tools to protect crops against pathogen.

**Methods:** Diff¬erent concentrations (0, 200, 400 and 600ppm) of aqueous and ethanol extracts of Lavender (Lavandula spica L.) were carried out for their anti-fungal activity (inhibition zone) in vitro on PDA with two techniques including paper disk and mixing with PDA medium.

**Results:** Plant extraction from Lavender showed the inhibition zone at all concentration (200, 400 and 600ppm) in the green mold in vitro compared to control . The concentrations (600ppm), showed a high e¬ffect on the prevention of the development of mycelia growth pathogen two tests. The aqueous and methanol extracts showed 21mm and 28.12 mm of inhibition zone diameter of fungal pathogen growth, respectively. In the mixing extracts with culture, the aqueous and methanol extracts showed 51.65 and 60.03% inhibition of pathogen growth compared to control.

**Conclusion:** Lavender extracts showed strong e¬ffects on the inhibition of postharvest pathogen as alternatives to chemical fungicides, while these compounds caused the increasing global pollution of the environmental. Extracts from lavender have high antifungal activity. This extracts have a good future in modern plant protection to replace conventional synthetic fungicides.

**Keywords:** Plant extract, Lavender, Penicillium digitatum

# P452 - 18: THE EVALUATION OF AQUEOUS AND METHANOL EXTRACTS EFFECT OF FENNEL AGAINST PENICILLIUM DIGITATUM ON ORANGE

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**Background and Aim:** Citrus fruit is susceptible to a wide variety of postharvest fungal diseases. Postharvest green mold, caused by Penicillium digitatum Sacc. is the most important postharvest disease that cause commercially significant losses. Currently, control of postharvest citrus diseases relies mainly on the use of synthetic fungicides, principally thiabendazole and imazalil, sprayed on fruit. Plant extracts are promising as alternative or complementary control means due to anti-microbial activity, non-phytotoxicity as well as biodegradability. ¬The use of plant extract is now emerging as one of the prime tools to protect crops against pathogen.

**Methods:** Diff¬erent concentrations (0, 200, 400 and 600ppm) of aqueous and ethanol extracts of Fennel (Foeniculum vulgare Mill.) were carried out for their anti-fungal activity (inhibition zone) in vitro on PDA with two techniques including paper disk and mixing with PDA medium.

**Results:** Plant extraction from Fennel showed the inhibition zone at all concentration (200, 400 and 600ppm) in the green mold in vitro compared to control . The concentrations (600ppm), showed a high e¬ffect on the mycelia growth pathogen two tests. The aqueous and methanol extracts showed 18.5 mm and 24.85 mm of inhibition zone diameter of fungal pathogen growth, respectively. In the mixing extracts with culture, the aqueous and methanol extracts showed 52.70 and 59.10% inhibition of pathogen growth compared to control.

**Conclusion:** Fennel extracts showed strong e¬ffects on the inhibition of postharvest pathogen as alternatives to chemical fungicides Such healthy products therefore may represent a sustainable alternative to the use of chemical fungicides for controlling postharvest diseases of citrus fruit.

**Keywords:** Plant extract, Fennel, Penicillium digitatum

# P453 - 21: CHECK AND COMPARE THE BIOFILM FORMATION OF PATHOGENIC BACTERIA IN MILK

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**Background and Aim:** The aim of this study was to compare the biofilm formation of pathogenic bacteria (Salmonella enteritidis, Staphylococcus aureus, Listeria monocytogenes and Enterococcus faecalis) on both aluminum and steel areas.

**Methods:** For this study microbiology laboratory bacteria, the bacterial Collections Research Center, Urmia University was prepared Artemia And tests were performed under sterile conditions. First 2ml to 200ml cultures of the bacteria was sterile TSB, The aluminum and steel bars with dimensions of 2 × 2 and 3 replications was thrown in man-containing medium After 48 h of incubation 37 ° C, the strips are washed with sterile saline and the above operation was repeated 5 times Drawing on the tenth day of each strip was conducted swab in sterile saline dilution dilution was 3-10 And in triplicate on TSA medium was planted on the surface, the environments were incubated for 48 h at 37 ° C and colonies were counted 3 dilution.

**Results:** The results showed that Salmonella and Listeria monocytogenes most Salmonella enteritidis the steel surface at least biofilms formed aluminum.

**Conclusion:** The steel surface was significantly better than aluminum surface biofilm formation showed strength.

**Keywords:** Biofilm, milk, aluminum, steel

# P454 - 37: ANTIBACTERIAL ACTIVITY AND PHYTOCHEMICAL CONSTITUENTS OF PELARGONIUM GRAVEOLENS L. AND ARTEMISIA SIEBERI L. ORGANIC EXTRACTS AGAINST ISOLATED PHYTOPATHOGENS FROM TOMATO IN VITRO

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**Background and Aim:** Bacterial diseases of fruit plants are known to cause great damages all over the world. In or-der to control plant disease, various chemicals have been used globally. Accumulation of these substances in animal tissues poses serious threat to human health. Green plants rep-resent a reservoir of effective chemotherapeutants and can provide valuable sources of natural pesticides. Traditional Plant species play a significant role in the management of phy-topathogenic microorganisms.

**Methods:** In vitro antibacterial activity of alcoholic extracts of the fruit of pelargonium graveolens and the leaf of Artemisia sieberi were investigated against the isolated species and standard phy-topathogens of tomato by using agar and well disk diffusion method compared to selected antibiotics.

**Results:** The extracts exhibited antibacterial activities with zones of inhibition ranging from 3 to 14 mm. The minimum inhibitory concentrations (MIC) of the extracts was between 32 and 512 mgml-1 following broth dilution assay. The minimum bactericidal concentrations (MBC) for extracts ranged between 64 and 512 mgml-1. Phytochemical screening revealed the pres-ence of saponin, phenolic compounds, tannin, alkaloids, flavonoids, steroids and terpenoids in P.graveolens and anthraquinone, flavonoids, tannin, phenolic compounds, alkaloid and terpenoids in the both extracts of A.sieberi. The ability of the fruit extracts of P.graveolens L. to inhibit the bacterial growth is an indication of its antibacterial potential which may be em-ployed in the biocontrol of other phytopathogens.

**Conclusion:** The results obtained in the present study indicated that the ethanol and methanol extracts of P.graveolens revealed a significant scope to develop a novel broad spectrum of antimi-crobial herbal formulation.

**Keywords:** Extract, Antibacterial activity, phytopathogens, Pelargonium, Artemisia, Phytochemical.

# P455 - 48: CLINICAL AND PARACLINICAL EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN THE WESTERN CITIES AREA OF KERMANSHAH PROVINCE ,WEST IRAN

Narges Babevey[1], Mehrdad Pooyanmehr[2]

1. -
2. -

**Background and Aim:** Brucellosis is one of the most important zoonotic disease constituting a public health problem worldwide. Brucellosis is usually associated with the consumption of unpasteurized milk and soft cheeses made from infected animals. The aim of this study was to a report prevalence of Brucellosis among people in the Western Cities Area of Kermanshah Province of Iran during six years.

**Methods:** In this study were examined only patients with a positive result in diagnostic tests in the years of 2010-2015 were reported. Factors Paraclinic information such as tests Wright – Combs and age - gender- work with animals the kind of contact with animals, consumption unpasteurized dairy products, who had been operated in referral Health Centers of the Western cities areas of Kermanshah province were collected. Generally, only 405 positive patients serum specimens that collected in Health centers laboratories (six years) were used in Coombs Wright Brucellosis test (In this test, serum titer of ≥ 1:80 is positive for brucellosis).

**Results:** Total Patients were 405 persons. the age of 14 to 70 were the highest rate of infection 0.234 % of men and 0.171% of the patients were women per 100.000 persons. The people were villager 77.8% and 22.2% were townspeople.77.8% of the patients had a history of direct contact with their animal and livestock. Consumption of unpasteurized dairy products were found in 98.43% of cases.

**Conclusion:** The results of this study show that infectious animals must be control for prevention of disease. It is concluded that screening of brucellosis is necessary in our population for basic programming.

**Keywords:** Seroprevalence, Brucellosis, Western Cities Area, Kermanshah Province

## P456 - 70: MICROALGAE AS FOOD

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**Background and Aim:** Microalgae as food.

**Methods:** There are a lot of microorganisms or food production.one of them is microalgae.

**Results:** In this review is used microalgae for food production.

**Conclusion:** Product byproducts metabolites like beta carotene flavors and organic acids for using of food.

**Keywords:** Microalgae, food, byproduct, flavor

# P457 - 76: PATHOGENIC BACTERIA AEROMONAS HYDROPHILA AND ITS COMMUNICATING WITH FOOD

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**Background and Aim:** Aeromonas hydrophila foodborne pathogens that have recently been of great interest. According to this pathogen primarily because of the ability to grow at low temperatures and by increasing the use of cold food storage also increases the risks caused by these pathogen.

**Methods:** The origin of this organism freshwater aquatic environments such as lakes, springs and sewage systems. This organism is resistant to chlorine found in drinking water has been identified but This organism can result in low levels of nutrients in water systems are also reproduced.

**Results:** Aeromonas intestinal inflammation often occurs in children under 5 years. The disease is usually mild, and the patient usually heals on its own. Symptoms often associated with severe watery diarrhea, although it may also occur in some cases, bloody diarrhea and usually nausea have not been reported in this disease. Aeromonas species, particularly Aeromonas hydrophila aggressive factors such as the number of cytotoxic enterotoxin and produce different sytotonic.

**Conclusion:** Apart from the role of bacteria in gastric inflammation of the organism in people whose immune systems have been weakened them, probably through food, water and causes severe infections in elderly enteral out.

**Keywords:** Bacteria, pathogens, intestinal inflammation

# P458 - 82: ISOLATION OF STAPHYLOCOCCUS AUREUS IN TRADITIONAL SHEEP'S CHEESE IN LIGHVAN ZONE AT EAST AZERBAIJAN, IRAN

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**Background and Aim:** Staphylococcus aureus is a facultative anaerobic Gram positive coccal bacterium that frequently found on the skin and nasal passages. This bacterium is one of the most important causes of acute gastroenteritis in human. Strains are responsible for food poisoning through the production of an enterotoxin, and pathogenicity is also associated with its coagulase positivity. Some strains produce the exotoxin TSST-1(causative agent of toxic shock syndrome) and some of them produce an enterotoxin (causative agent of gastroenteritis).

**Methods:** In this study 120 samples of traditional cheeses were taken from various production and distribution centers in Lighvan village zone since 5 December 2015 to 10 January 2016. Samples carried to microbiology laboratory under the sterile and cold chain condition and diluted in peptone water (0.1%) and 0.1 cc of each dilution was cultivated on Baird parker agar and incubated at 370 C for 24h. colonies were counted and catalase, glucose, mannitol and coagulase tests were carried out.

**Results:** Results showed 76% contamination with S. aureus coagulase positive. 6% of all contaminated cheeses had a bacterial load more than 105 cfu/g of S. aureus coagulase positive which can produce staphylococcal entrotoxins and it can be the causative agent of gastroenteritis in humans.

**Conclusion:** The result of this study showed low hygienic control in producing traditional dairy products in Lighvan zone and highlighted its public health hazards. Thus it requires effective clearance strategies and hygienic measures in primary production to avoid a potential transfer of S. aureus into the dairy processing and the final retail product.

**Keywords:** Microbial contamination, Staphylococcus aureus, traditional cheese

# P459 - 85: MICROBIAL CONTAMINATION OF TRADITIONAL PITCHER CHEESES IN TABRIZ AREA, EAST AZERBAIJAN,IRAN.

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**Background and Aim:** Microbial infectious diseases that they caused by food and dairy products has increased in recent years throughout the world. Among different foodstuffs, cheese is one of the most important foods that people use it for a long time. This study was carried out in order to evaluate microbial contamination rate of traditional pitcher cheeses in Tabriz area.

**Methods:** This study was carried out for a period of 12 months and 150 samples of pitcher cheeses were randomly collected from their production and distribution centers in different areas of West Azerbaijan specially Tabriz area. After homogenization and transferring samples to the pre-enrichment and enrichment media for incubation and enrichment, they were cultured on selective media like XLDagar (Xylose Deoxycholate agar); Mac Conkey agar and suspected colonies were treated with biochemical tests.

**Results:** In this study 150 samples of traditional pitcher cheeses were studied and results showed that 64% were contaminated with Coliforms, 39% with Escherichia coli, 5% with Salmonella enteritidis, 6% with Staphylococcus aureus coagulase positive and in some samples Klebsiella, Citrobacter, molds and yeasts were isolated.

**Conclusion:** Because salmonella serotypes are resistant against environmental conditions and also they are potential pathogens for human and usually affected them through the contamination of water, food and environment and some serotypes of E.coli are important causes of children's and adults diarrhea and gastrointestinal problems. Therefore observing health principles for livestock and having a good control over sanitation conditions in dairy product centers is necessary and essential.

**Keywords:** Microbial contamination, pitcher cheese, salmonella, E.coli

# P460 - 100: MICROBIAL CONTAMINATION INVESTIGATION OF FOOD SUPPLY IN THE FUEL CENTER RESTAURANT IN TEHRAN CITY

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**Background and Aim:** In view of food hygiene and food borne diseases prevalence, hand and surface hygiene ignore in restaurant are considered as the most important factor in possible transfer of food infection in customer. The aim of this analytical study is to identify and count the microbial contamination of air, food supply, plate, surface, and worker's hand in the fuel center restaurant in Tehran city.

**Methods:** In this analytical study to sample, census and random sampling is used. 27 samples are taken from air (5 samples), cabinet (1 sample), dining table (3 samples), food supply(10 samples), plate (3 samples), and worker's hand(5 samples) in the fuel center restaurant in Tehran city. The food samples are collected in sterile bottle according to procedure detailed in national standard methods.

**Results:** Ghormasabzee and gogee kabab have the maximum (6.5×103) and the minimum (<10) total aerobic bacteria count, respectively. Refrigerator chamber air and food storage air have the minimum (0.65 vs. 1.25 CFU/m3) and the maximum (1.45 vs. 5.63 CFU/m3) fungal and bacterial gross, respectively. The fungal and bacterial gross of cabinet surface are 1.2 CFU/m3and 4.25 CFU/m3, respectively. The mean fungal and bacterial gross of dining table surface are 1.24(1.15-1.34) CFU/m3and 3.78(3.32-4.17) CFU/m3, respectively. The mean fungal and bacterial gross of plate surface are 1.43(1.11-1.98) CFU/m3and 3.7(3.32-4.23) CFU/m3, respectively. The mean fungal and bacterial gross of worker's hand surface are 1.51 (1.31-1.87)CFU/m3and 4.13(2.51-5.17) CFU/m3, respectively.

**Conclusion:** It can be concluded that personal hygiene training of workers and supervision on food storage lead to prevent food microbial contamination.

**Keywords:** Air, Food supply, fuel center restaurant, Hand surface, Microbial contamination

# P461 - 104: EVALUATION OF ANTIMICROBIAL ACTIVITY OF LACTOBACILLI ISOLATED FROM DAIRY PRODUCTS AGAINST PATHOGENIC BACTERIA

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**Background and Aim:** Probiotic lactic acid bacteria can be introduced as live microorganisms that have beneficial effects on human gastrointestinal. Probiotics inhibit the pathogenic bacteria colonization such as Salmonella tiphymorium, Listeria monocytogenes and E. coli using different mechanisms including enzyme production and intestinal tract pH reduction. The intestinal tract of human is inhabited by several bacteria that among them probiotics can improve the microbial balance through microbial actions. Species of the genera Lactobacillus, Bifidobacterium, and Enterococcus are considered as probiotics. The aim of this study was to isolate the lactobacillus species from dairy product and to determine the antimicrobial activity against some pathogenic bacteria.

**Methods:** A total of 30 dairy products were collected. Serial dilutions were made and 100 µl aliquot was plated on MRS Agar medium and incubated at 37ºC for 48-72h in incubator with 10% CO2. Selected colonies were characterized according to the morphological, physiological and biochemical tests. Antibacterial activity was investigated against some pathogenic bacteria including S. aureus, E. coli and E. faecalis by agar well diffusion assay.

**Results:** 14 species of the genus Lactobacillus comprised of Lactobacillus casei, Lactobacillus bulgaris and Lactobacillus delbrueki were isolated and identified. The lactobacillus strains showed antibacterial activity against pathogens. Lactobacillus casei showed the most potent effect on pathogen bacteria. The inhibition zones ranged from 4 mm to 15 mm.

**Conclusion:** The results obtained in this study showed the capability of probiotic lactic acid bacteria to inhibit some important pathogens that are advantageous for using these strains as potential probiotics.

**Keywords:** Probiotics, Lactobacillus, antimicrobial activity, Salmonella typhimurium, E.coli

# P462 - 121: ANTIMICROBIAL EFFECTIVENESS OF BILAYER NANOCOMPOSITE CELLULOSE-CHITOSAN FILMS CONTAINING NISIN AGAINST LISTERIA MONOCYTOGENES IN VITRO

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**Background and Aim:** The aim of this study is to prepare bilayer nanocomposite cellulose-chitosan (CC) films containing nisin according to the method of sol-gel and investigate antimicrobial activity against Listeria monocytogenes.

**Methods:** Cellulose paper with dimensions of 20 × 20 mm was coated with chitosan solution contains ZnO and two concentrations of nisin (0.5 and 1 mg/mL) according to a novel sol-gel method. The antimicobial assay was performed in 20 mL TSB medium containing ~6 log10 CFU/mL of L. monocytogenes. Antimicrobial films with contact surface area of 400 mm2 were cut, sterilized using UV light for 2 min and placed in an inoculated medium and kept in an environmental shaker at 37 ± 1°C for 24 h while shaken at 150 rpm. Aliquots of 1 mL were taken at 3, 6, 9, 12 and 24 h. The number of viable cells was determined by preparing a serial dilutions in 0.1% peptone water and plating on TSA.

**Results:** In the CC films samples, L. monocytogenes grew rather rapidly, reaching approximately 9.33 log10 CFU/mL in 24h. CC film samples containing 0.5 and 1 mg/mL nisin decreased 2.5 - 2.7 log of number of bacteria after 6 hours and it was continued downward trend until 12h.

**Conclusion:** The results showed that CC nanostructure films containing nisin have an acceptable antimicrobial effect against L. monocytogenes. These films are suitable in order to control bacteria in foods.

**Keywords:** Active packaging, nisin, chitosan, nanocomposite film

# P463 - 128: MICROBIOLOGICAL QUALITY OF A TRADITIONAL FERMENTED FISH PRODUCT (SOORAKH) OF IRAN

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**Background and Aim:** The Soorakh is a traditional fermented fish product, produced by natural fermentation of Hashineh fish of coastal area of Booshehr of Iran. The present study was conducted to investigate the microbiological characteristic of this traditional fish product.

**Methods:** Homemade Soorakh purchased from local market. The viable cell numbers of total bacteria, halophilic bacteria, fungi, halophilic yeasts and lactic acid bacteria from 7 samples were counted. Test of gram coloration, catalase, oxidase, fermentation of carbohydrate, phosphate, coagulase, nitrate reduction, production of acid and Co2, beside morphological study, used to recognition of the bacteria.

**Results:** The microbial studies of salted-fermented fish revealed a total bacterial count ranging from 3.12 to 4.95 Log10 CFU/g, yeast and mold counts ranging from 0.33 to 3.21 Log10 CFU/g, total staphylococci count 2.11–4.05 Log10 CFU/g, halophile bacteria count 2.77–4.23 Log10 CFU/g, and coliforms count. The major bacteria species isolated and identified from the salted fermented fish were Bacillus Subtilus, Bacillus licheniformis, Lactobacillus plantarum and Lactobacillus alimentaria, Staphylococcus epidermidis and Staphylococcus saprophticus.

**Conclusion:** This study showed the presence of gram positive and gram negative bacteria in the fish product. The predominant microorganisms found were Bacillus and Lactobacillus spp

**Keywords:** Fermented fish, Soorakh, Bacillus, Lactobacillus

# P464 - 153: EVALUATION OF ANTIBACTERIAL ACTIVITY, PHYTOCHEMICAL SCREENING ETHANOLIC EXTRACT OF LEAVES OF ADIANTUM CAPILLUS-VENERIS L. FROM TONEKABON – IRAN

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**Background and Aim:** Natural products have been a major source of new drugs. Plant used for traditional medicine contains a wide range of substances that can be used to treat chronic as well as infectious diseases. Adiantum capillus-veneris L. is a medicinally essential plant used for the treatment of diverse infectious diseases. The aim of this study was to investigate the antibacterial effect of ethanolic extract of Adiantum capillus-veneris L. (Polypodiaceae) from Tonekabon - Iran, to the four species of common pathogenic bacteria resistant to multiple drugs in vitro such as:, Pseudomonas aeruginosa (PTCC 1599), Escherichia coli (PTCC 1399), Shigella dysenteriae (PTCC 1188) and Staphylococcus aureus (PTCC 1113).

**Methods:** In this study, ethanolic extract of leaves of Adiantum capillus-veneris L. prepared by microwave assisted extraction (MAE) method.The antibacterial activity was determined by minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) method against four strains of Gram-positive and Gram-negative bacteria. The micro-dilution method was applied for the determination of the MIC of selected bacteria strains. Also, phytochemical study was performed by using standard phytochemical methods.

**Results:** The ethanolic extract of leaves of Adiantum capillus-veneris L. exhibited good antibacterial potential against gram positive and gram negative bacterial strains. Also, our preliminary phytochemical analysis of leaves extract using ethanol as solvent confirmed the presence of flavonoids, tannins, coumarins, phenols and terpenoids. This indicates that antibacterial activities may be due to presence of secondary metabolites.

**Conclusion:** The findings of the present study demonstrated the potential of phytochemicals from Adiantum capillus-veneris L. leaves, a natural source, in the pathway of developing a novel antibacterial agent able of treating bacterial infections.

**Keywords:** Adiantum capillus-veneris L., Escherichia coli, Secondary metabolites, Antibacterial activity. Terpenoids, MIC

# P465 - 154: EVALUATION OF ANTIBACTERIAL ACTIVITY, TOTAL PHENOLIC AND FLAVONOIDS CONTENT OF METHANOLIC EXTRACT OF LEAVES OF NASTURTIUM OFFICINALE FROM TONEKABON – IRAN

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**Background and Aim:** Medicinal plants are the oldest known source for treatment of disease. Using pharmaceutical plants and plant extracts have been at great attention. Different extracts from traditional medicinal plants have been tested to identify the source of the therapeutic effects. As a result some natural products have been approved as new antibacterial drugs, but there is still an urgent need to identify novel substances that are active towards pathogens with high resistance. In the present study, evaluation of antibacterial activity, total phenolic and flavonoids content of methanolic extract of leaves of Nasturtium officinale from Tonekabon – Iran.

**Methods:** In this research, the antibacterial activity and phytochemical studies of the methanolic extracts of Nasturtium officinale were tested against four bacteria strains including Staphylococcus aureus (PTCC 1113), Bacillus subtilis (PTCC 1156), Escherichia coli (PTCC 1399), and Pseudomonas aeruginosa (PTCC 1599). The minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) values was determined by micro-dilution method. The total phenolic and flavonoids contents (TPC & TFC) of the extracts were then measured using Folin-Ciocalteu Reagent (FCR) and Aluminum chloride colorimetric methods, respectively.

**Results:** The methanolic extract of leaves of Nasturtium officinale showed significant antibacterial activity against both Gram - positive and Gram - negative bacteria. The total phenolic contents (mg of GaA/g of extract) of methanolic extracts was 88.7±0.3 respectively and the total flavonoids contents (mg of QE/g of extract) of methanolic 65.4±0.5 respectively.

**Conclusion:** Conclusively, Nasturtium officinale is valuable source for new compounds and should receive special attention in research strategies to develop new antibacterial urgently required in the near future.

**Keywords:** Nasturtium officinale, Methanolic extracts, MIC, TFC, FCR

# P466 - 155: IN VITRO ANTIOXIDANT, ANTIBACTERIAL ACTIVITY OF METHANOLIC EXTRACT OF MENTHA PULEGIUM FROM RAMSAR - IRAN

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**Background and Aim:** The medicinal plants are useful for healing and as well for curing human diseases because of the presence of phytochemical constituents. Phytochemicals are naturally occurring compounds in medicinal plants which have defense mechanism and protect various diseases. In recent years natural antibiotics have been used for several infectious diseases, regarding to this, the work on new antimicrobial agents from plants are even more essential especially in the countries like where infectious diseases of bacteria are not only rapid but are also more resistant to common antibiotics. In the present study, in vitro antioxidant, antibacterial activity of Mentha pulegium from Ramsar – Iran.

**Methods:** In this study, the leaves of Mentha pulegium were collected from Ramsar, Iran and methanolic extract prepared by microwave assisted extraction (MAE) method. Then, antioxidant activity of methanolic extracts of leaves of Mentha pulegium was evaluated in vitro using 2,2-diphenyl- 1,1-picrylhydrazyl radical (DPPH0) free radical scavenging method and antibacterial effect of Mentha pulegium extracts was evaluated against several pathogenic bacteria associated with human infections viz. Escherichia coli (PTCC 1399), Pseudomonas aeruginosa (PTCC 1599), Staphylococcus aureus (PTCC 1113), Salmonella typhimurium (PTCC 1609) and Shigella dysenteriae (PTCC 1188) by minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) method.

**Results:** Methanolic extract showed potent antibacterial activity against human pathogenic bacteria. Also, the IC50 values (mg/mL) of methanolic extracts was 15.63 respectively using Vit C as controls.

**Conclusion:** Therefore, due to the high amount of natural component, antioxidant and antibacterial activity, Mentha pulegium can be used for treating diseases that were caused by oxidative stresses and pathogenic bacteria.

**Keywords:** Mentha pulegium, Antioxidant activity, Antibacterial activity, Cancer

# P467 - 164: INVESTIGATING THE ANTIFUNGAL EFFECT OF IRANIAN CHESTNUT FLOUR ON PENICILLIUM EXPANSUM AND ASPERGILLUS NIGER

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**Background and Aim:** Numerous studies have demonstrated the antimicrobial properties of the Iranian chestnut.

**Methods:** Sabouraud dextrose agar was used by adding 0.5 and 1 % of the chestnut flour and wheat flour along with a control (without flour). Then, the fungal suspension containing the spores of P. expansum and A. niger was cultured and the results were recorded

**Results:** A. niger was extremely sensitive to the chestnut flour as there was no evidence of growth in the presence of 0.5% chestnut flour. However, the growth of P. expansum was well in 0.5% chestnut flour, but its growth was greatly reduced by increasing the chestnut flour in the medium to 1%.

**Conclusion:** Iranian chestnut flour contains strong amounts of anti-fungal compounds and so it was able to control the growth of P. expansum and A. niger. Thus, it could be suggested as a natural preservative to control food spoilage and bakery products.

**Keywords:** Chestnut, Penicillium expansum, Aspergillus niger, antifungal compound

# P468 - 174: ANTIBACTERIAL ACTIVITY AND MICROSCOPIC PROPERTIES OF CHITOSAN-CELLULOSE BILAYER FILM CONTAINING MONOLAURIN

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**Background and Aim:** Nowadays, most antimicrobial films for food packaging are produced in the form of bilayers. The aim of this study was to evaluate the antimicrobial activity of chitosan-cellulose bilayer film containing monolaurin against Listeria monocytogenes in vitro condition.

**Methods:** Chitosan solution was made by the using sol-gel method with chitosan, Zn nanoparticles, Tris, Ortho-silicate tetraethyl and Glycerol. Monolaurin was added at 0.5 and 1% concentration and the solution was coated on the cellulose films. Antimicrobial activity of UV sterilized films was assessed according to Shake flask assay during the period of 3, 6 and 9 h. Microscopic properties of developed film were examined using Scanning Electron Microscope (SEM).

**Results:** Antimicrobial effect of films containing monolaurin concentration of 5 and 10 % was acceptable against L. monocytogenes, So that the film contains monolaurin 5 and 10 % caused to decrement of 5.1 and 5.2 Log CFU/mL of bacteria after 9 hours.

**Conclusion:** The results of SEM showed that chitosan-cellulose layer containing monolaurin had uniform appearance and sol-gel nanoparticles of chitosan film was distributed on a regular basis.This dual-layer antimicrobials film for the control of pathogenic bacteria in food models can be appropriated.

**Keywords:** Bilayer film, chitosan, monolaurin, sol-gel

# P469 - 222: EVALUATION OF MICROBIAL CONTAMINATION IN MOZZARELLA CHEESES IN WEST AZARBAIJAN PROVINCE OF IRAN DURING 2015 TO 2017

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**Background and Aim:** For this purpose, this article evaluate microbial quality of Mozzarella cheeses and Processed Mozzarella cheeses which are produced in food factories of Western Azarbaijan province of Iran. Aim of this paper is of Checking of food products safety level consumed by population and Improving of food products safety level by assumption of true solutions. From inspection of results, we can conclude the situation in case of industrial Mozzarella cheeses and Processed Mozzarella cheeses from point of microbial contamination needs much attention of producers and food authorities for obtaining better results.

**Methods:** Samples were collected in completely sterile condition from this province 's dairy factories and transferred to the microbiological laboratory of Urmia food and drug control lab . All microbiological analyses were performed based on ISIRI-2406 and microbiological order of food and drug organization. Samples were evaluated from the point of contamination to Coliforms, Escherichia, Campylobacter jejuni, Listeria monocytogenes, Salmonella species, Staphylococcus aureus, Moulds, Yersinia entrocolitica and Yeasts.

**Results:** From 29 of Mozzarella cheeses samples, 13 of them were not in accordance with ISIRI 2406 from point of contamination to Coliforms, Escherichia and Yeasts. From 21 of Processed Mozzarella cheeses samples, 4 of them were not in accordance with ISIRI 2406 from point of mentioned contamination.

**Conclusion:** From inspection of results, we can conclude the situation in case of industrial Mozzarella cheeses and Processed Mozzarella cheeses from point of microbial contamination needs much attention of producers and food authorities for obtaining better results.

**Keywords:** Microbial contamination, industrial Mozzarella cheeses and Processed Mozzarella cheeses and West Azarbaijan Province

# P470 - 229: ASSESSMENT OF MICROBIOLOGICAL QUALITY OF POTABLE WATER DISTRIBUTED IN BUSES OF PASSENGER STATION REVOLUTION OF ZAHEDAN, IRAN

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**Background and Aim:** The water in the busses is used for passengers for drinking usage. Quality examination of water is usually based on the detection of total and fecal coliforms the aim of this study is to determine the water quality in commuting buses of Zahedan Enghelab terminal.

**Methods:** For this study, samples were taken randomly from suburban buses at the terminal of Zahedan city. The Total number of buses was 244 from which 61 buses were selected as samples. Total and fecal coliform, turbidity, residual chlorine, temperature and pH were measured. Measurement of turbidity, chlorine, temperature and pH were done at the sampling site. In this study, water total and fecal coliform bacteria was studied by method using nine-tube fermentation. The gained data were analyzed using Excel 2007 & SPSS 18 software.

**Results:** The results showed that residual chlorine in 96/7% was zero and pH values of the samples were in the range of 6/7-8/2. TC and E. coli numbers in 24/5% of the samples were higher than those of standards. Method of usage and storage of drinking water (with 20-liter tanks) had significant effects on the bacterial loads of the drinking water in the tanks ($p>0/05$). Some factors such as tank material and driver's education had no significant effect on the quality of the drinking water in the buses ($p>0.05$).

**Conclusion:** The results indicated that some of the samples had microbial contamination, considering that residual chlorine level in 96/7% of the sample was zero. authorities should heed this as a warning.

**Keywords:** Microbial Quality, Bus Water Fountain, Drinking Water, Coliform

## P471 - 238: ANTIMICROBIAL ACTIVITIES OF SCANDIX PECTEN-VENERIS L.

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**Background and Aim:** Scandix pecten-veneris L. or Shepherd's-needle is a weed species used in some countries for medicinal purposes.

**Methods:** In this study S. pecten-veneris leaves were shade dried, powdered and extracted with methanol.Antimicrobial activity of leaf extracts were assayed by disc diffusion and minimum inhibitory concentration methods against two fungi (A. niger and C. albicans) and two Gram-positive bacteria (B. subtilis and S. aureus) and two gram-negative bacteria (P. aeruginosa and K. pneumoniae).

**Results:** The methanolic extract was examined for its antimicrobial powers against four different bacteria with MIC values >100.

**Conclusion:** Our results introduced this plant as a useful factor for the treatment of infectious diseases.

**Keywords:** Scandix pecten-veneris, antimicrobial activity

# P472 - 252: GENOMIC DETECTION OF MYCOBACTERIUM IN RAW AND UNPASTEURIZED COW MILK OF TRADITIONAL DOMESTIC DAIRY PRODUCTS VENDORS IN KHORRAMABAD

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**Background and Aim:** Tuberculosis is the considered as one of the most important and dangerous zoonosis and causing irreparable economic losses to dairy industry each year. The most common transmission of the disease is through inhalation of aerosols, drinking of unpasteurized milk from an infected cow and the sharing of common water or feed sources. Since milk and dairy products are one of the most important sources for supplying the protein needs of the Iranian people, the aims of present study was to Genomic Detection of Mycobacterium in Raw and Unpasteurized Cow Milk of Traditional domestic dairy products Vendors in Khorramabad.

**Methods:** In this cross - sectional study a total of 120 raw and unpasteurized cow bulk tank milk samples were collected from October 2015 to November 2015. Genus specific PCR was used to identify the Mycobacterium tuberculosis complex (MTBC) organism, and multiplex PCR (mPCR) were done to differentiate M. tuberculosis and M. bovis using specific primers.

**Results:** Results showed out of 120 raw and unpasteurized cow bulk tank milk samples, only one sample was positive for Mycobacterium tuberculosis complex. However, in mPCR using specific primers, there was no sample for M. tuberculosis and M. bovis.

**Conclusion:** Control strategies for human tuberculosis caused by Mycobacterium tuberculosis complex (MTBC) should necessarily include the control strategies in animals too.

**Keywords:** Mycobacterium, Milk, Khorramabad, PCR

# P473 - 257: DETECTION OF GIARDIA LAMBLIA INFECTION AMONG 1-10 YEAR-OLD CHILDREN IN NORTHWEST OF IRAN

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**Background and Aim:** Giardia lamblia (G. lamblia) infection is a major health problem among children. Infection of this protozoan especially among 4-11 year-old children results in steatorrhea, malnutrition, avitaminose and growth retardation. The aim of this study was detection of G. lamblia infection among the children of Ardabil (northwest of Iran), and comparison the diagnostic value of sheather, s sugar floatation and formalin-detergent sedimentation methods.

**Methods:** Feces samples of 377 children aged 1-10 year, referred to Bu-Ali hospital were collected between August 2016 and November 2016 and G. lamblia infection was examined using sheather, s sugar floatation and formalin-detergent sedimentation methods in Parasitology Laboratory of Ardabil Branch, Islamic Azad University.

**Results:** Of the 377 samples, 3.18% were positive for G. lamblia infection. 66.7% of the positive samples belonged to boys, and 33.3% to girls. We found a significant relationship between G. lamblia infection and gender (sig. =0.000, $p<0.05$). 75% of the infected children pertained to 1-5 year-old group, and 25% to 6-10 year-old group. Diagnostic value of sheather, s sugar floatation was better than formalin-detergent sedimentation method (sig. =0.048, $p<0.05$).

**Conclusion:** Giardia lamblia infection is prevalent among the children of Ardabil (northwest of Iran), and sheater, s sugar floatation is a simple, effective and un-expensive method for diagnosing of G. lamblia infection.

**Keywords:** Detection, Giardia lamblia infection, Children, Northwest of Iran

# P474 - 275: STUDY OF PHYTOCHEMICAL AND MICROBIOLOGICAL ACTIVITY OF THYMUS VULGARIS L. ESSENTIAL OIL UNDER LEAD STRESS

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**Background and Aim:** Garden thyme is a medicinal plant that because abundant phenolic compounds having antimicrobial and antioxidant and is also used in the food industry and household uses. One of the methods to infer the quality of this plant measure the amount of metals such as lead, which affects on the medicinal properties of it.

**Methods:** Antimicrobial activity was evaluated by measuring the zone of inhibition using disc diffusion method and the MIC values were determined for bacteria of Bacillus subtilis,Staphylococcus aureu, Pseudomonas aeruginosa and Escherichia coli that were sensitive to the essential oil.

**Results:** The findings of this study showed that the amount of thymol in the treated plants with lead in comparison with control plants 22% decreased and the biosynthesis of carvacrol was stopped by lead stress. The diameter of the zone of growth inhibition for essential oil samples containing lead in all gram-negative bacteria used in this study were less, but the minimum inhibitory concentration of essential oil of stressed sample was more than the control. The effect of essential oil of control plants on the growth of B. subtilis and S. aureus bacteria in comparison with the antibiotic gentamicin were more, while the essential oil of plants treated with lead showed weaker performance compared to the gentamicin.

**Conclusion:** The aim of this study was to investigate the impact of the heavy metal lead on the antimicrobial properties of thyme and as well as changes in the amount of essential oil-forming compounds.

**Keywords:** Essential oil, Lead, Phytochemistry, Stress, Thyme (Thymus vulgaris L.)

# P475 - 286: THE CORYNEBACTERIUM GLUTAMICUM, AN INDUSTRIAL WORKHORSE FOR PRODUCTION OF L-LYSINE: A REVIEW OF ADVANCES, IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

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**Background and Aim:** In addition to pathogenicity of bacteria, they have useful applications in various fields, including their use in industry for production diverse substances. Corynebacterium glutamicum has a high potential to synthesize and secrete copious amounts of L-lysine amino acid. L-lysine is one of the most used amino acids in various industries that it used in animal feed, synthesis of pharmaceuticals, nutritional supplements for athletes and as a raw material in the food industry.

**Methods:** A literature search of six electronic databases was conducted to detect relevant articles of C. glutamicum and lysine production that were published from 1956 - 2017. These studies were evaluated in terms of the amount of L-lysine production and time requirement for it.

**Results:** In an attempt to increase and optimize the production of L-lysine in C. glutamicum, a variety of methods have been conducted during the past 60 years. In 1956, most studies were focused to optimize the culture media of C. glutamicum. Gradually and with the development of genetic engineering and biotechnology, complete genome sequences of C. glutamicum, namely R (3,314,179 bp) and ATCC 13032 (3,309,401 bp or 3,282,708 bp) were deciphered. Then the genes involved in the metabolism of C. glutamicum were detected. Following these developments, nowadays many studies with using genetic engineering technologies such as CRISPR interference (CRISPRi) done, to increase production of L-lysine in C. glutamicum.

**Conclusion:** According to the results of this study, genetic engineering techniques, especially CRISPR genome editing technology, are quick and efficient tools for improve the metabolic conditions and L-lysine overproduction.

**Keywords:** Corynebacterium glutamicum, L-lysine, genetic engineering, CRISPR

# P476 - 313: THE STUDY OF ANTIBACTERIAL EFFECT OF CHITOSAN FILM INCLUDING LAVANDULA STOECHAS ON GROWTH OF VIBRIO PARAHAEMOLYTICUS, ECOLI O157 H7,LISTERIA MONOCYTOGENESIS ,STAPHYLOCOCCUS AREUSE BY DISC DIFFUSION METHOD

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**Background and Aim:** Nowdays, application of antimicrobial films for food packaging have been increased. The present study was carried out in order to investigate the antimicrobial activity of chitosan films containing 1–4% (v/v) Lavandula stoechas essential oil (EO) on some food-borne pathogenic bacteria (Listeria monocytogenes, Bacillus cereus, Vibrio parahaemolyticus, Staphylococcus aureus and Escherichia coli O157:H7) on BHI agar.

**Methods:** Lavandula stoechas were gathered from Tabriz city at summer and identified by Institute of Medicinal Plants (SID) . Lavandula stoechas essential oil were obtained from Clevenger apparatus.The components of Lavandula stoechas essential oil analyzed with GCmass.The maximum amount of EO components was1,8-cineole(49/16) After separately bacterial cultures(Listeria monocytogenes, Bacillus cereus, Vibrio parahaemolyticus, Staphylococcus aureus and Escherichia coli O157:H7) on BHI agar,circular discs of chitosan films containing different concentrations of Lavandula stoechas essential oil were placed on bacterial lawn and incubated 37·C/24-48 hr.Statistical analysis was done with ANOVA.

**Results:** Results of this study showed Incorporation of chitosan film with Lavandula stoechas EO a significant antimicrobial effects ($P < 0.05$). Chitosan films incorporated with 4% v?v of EO inhibited the growth of all tested pathogenic bacteria. Maximum and minimum antimicrobial effect of chitosan films containing Lavandula stoechas essential oil were belonged to Vibrio parahaemolyticus and Escherichia coli O157:H7 ,respectively.

**Conclusion:** The conclusion showed that Chitosan films containing Lavandula stoechas EO can be used as antimicrobial packaging foods.

**Keywords:** Chitosan, lavender essential oil, Staphylococcus aureus, V. parahaemolyticus, .listeria monocytogenes, E.coli, disk diffusion

# P477 - 321: BIOFILM FORMATION BY PSYCHOTROPHIC BACTERIA ISOLATED FROM BULK MILK TANKS AND DAIRY PROCESSING EQUIPMENTS

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**Background and Aim:** Psychorotrophs are the heterogeneous group of bacteria that can grow at refrigerator temperatures. Most of these bacteria produce extracellular proteases and lipases which decompose lipids and proteins in milk that leads to undesirable defect in milk. These defects do not disappear even after pasteurization and sterilization. This study aimed to investigate the occurrence rate and diversity of psychotropic bacteria in raw milk tankers and dairy processing equipments. Afterwards, the isolates were assayed for the biofilm-forming ability.

**Methods:** A total of 80 samples including 30 samples of raw milk tanks, 30 samples of dairy product processing equipments and 20 samples from different surfaces of the production line were collected. The samples were examined for the presence of psychotropic bacteria, diversity and biofilm formation.

**Results:** According to the results, 26.25% of the samples were found contaminated with psychrotrophic bacteria. Amongst, 65% of the surface samples of production line, 23.33% of the raw milk tanks and 3.3% of the processing equipment were positive for psychrotrophic bacteria. Out of 31 isolates, Bacillus genus had the highest contamination rate (32.25%); however Alcaligenes showed the lowest contamination rate (3.2%). The results of biofilm formation revealed that 21 isolates (67.75%) were able to produce biofilm.

**Conclusion:** It was concluded that current CIP procedure is not efficient for the complete removal of psychotropic bacteria from the processing plants and requires the application of complementary approaches to control the formation of biofilm in dairy industry.

**Keywords:** Psychrotrophic bacteria, Biofilm, Raw milk tanks, Dairy processing equipments

# P478 - 322: OPTIMIZATION OF FERMENTATION CONDITIONS TO GENERATE PROTEIN HYDROLYSATES WITH INHIBITORY ACTIVITIES AGAINST BACILLUS CEREUS AND ESCHERICHIA COLI O157: H7

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**Background and Aim:** Because of the roles of Bacillus cereus and Escherichia coli O157: H7 in food-borne disease and also concerning about synthetic preservatives and antibiotics, finding natural antimicrobial components against these bacteria has gained much attentions during recent years.

**Methods:** In this study, response surface methodology (RSM) was used to optimize fermentation parameters (protein substrate, fermentation time and inoculum size) for obtaining antibacterial hydrolysates from tomato seed proteins. Bacillus subtilis A14h (0.3 – 3.7%, v/v) was used to liberate peptides from parent proteins.

**Results:** The resulting hydrolysates showed higher inhibitory effect on B. cereus (about 70% reduction in specific growth rate) than E. coli (29.8 % reduction in specific growth rate) which is in agreement with the results of some previous studies in which Gram-positive bacteria had more sensitivity against bioactive peptides. In case of B. cereus inhibition, the most potent inhibitory hydrolysates was obtained in design point with 7% (w/v) protein substrate, 24 h (time) and 3% (v/v) inoculum size while for E. coli inhibition was obtained at 3% against (w/v) protein substrate, 18 h (time) and 2% (v/v) inoculum size. Verification showed that the suggested models were powerful enough to modelling fermentation conditions and suggested that RSM is a good tool to optimize conditions for producing antibacterial hydrolysate from food proteins.

**Conclusion:** In overall, the results showed that value added antibacterial peptides can be produced from food proteins via fermentation that can be used in food and pharmaceutical industries.

**Keywords:** Antibacterial agents, Bacillus cereus, Escherichia coli, bioactive peptide

# P479 - 323: DIVERSITY OF BACILLUS SPECIES ISOLATED FROM BIOFILM OF RAW MILK TANKERS AND DAIRY PROCESSING EQUIPMENTS

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**Background and Aim:** Bacillus is the dominant genus encloses gram-positive spore-formers that some are considered as a threat to the quality of foods and consumers' health. This study aimed to explore the occurrence of Bacillus species in raw milk tankers and dairy processing equipments as well as to examine the biofilm-forming ability of the isolates.

**Methods:** For this reason, a total of 80 samples consisting of 30 samples obtained from raw milk tankers, 30 samples of dairy processing equipments and 20 samples from various surfaces of the production plant was collected. The samples were subjected to standard culture assays and occurrence as well as the diversity of Bacillus spp. was investigated.

**Results:** According to the results, 16.66% of the samples obtained from raw milk tankers, 20% of dairy processing equipments and 40% of surface samples were found positive for Bacillus species. Various species of the Bacillus were found; amongst B. cereus with 36% and B. aloe and B. pumilus with 4% occurrence rate, were the most and least abundant species, respectively. Results of biofilm production revealed that 96% of the isolates were capable of producing biofilm.

**Conclusion:** It was concluded that conventional CIP procedure is unable to entirely remove the biofilm of Bacillus species from dairy plant surfaces. Hence, there is a need for a new approach to conquer the problem.

**Keywords:** Bacillus, Biofilm, Raw milk tankers, Dairy processing equipments

# P480 - 325: ROLE OF COLIFORMS ON BIOFILM FORMATION IN RAW MILK TANKERS AND DAIRY PROCESSING EQUIPMENT

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**Background and Aim:** Coliforms are an important broad class of Enterobacteriaceae that make 10% of intestinal microbial population and they are not basically pathogen. Coliform tests as indicator microorganisms, in dairy industries are extensively used to show process error, environmental health and secondary contamination of the product. This study aimed to evaluate the contamination rate and biodiversity of coliform bacteria in raw milk tanks and dairy processing equipment as well as to assess the ability of the isolates to produce biofilm.

**Methods:** A total of 80 samples consisting 30 samples from raw milk tanks, 30 samples from processing equipments of the dairy products and 20 samples from different surfaces of the production line were collected. Coliform bacteria were detected and identified using conventional culture methods.

**Results:** According to the results, 8.75% of the samples were contaminated with coliforms. Amongst Enterobacter and Klebsiella had the highest contamination rate of 31.25%; meanwhile Citrobacter showed the lowest contamination rate of 12.5%. The results of ELISA assay showed that 87.5% of the 16 isolates had the capability of biofilm formation and 2 (5.12%) Escherichia coli isolates were found biofilm-negative.

**Conclusion:** It was concluded that the presence of several positive samples on the production line floor and conveyor belts, represents a high potential risk of these areas and still, there is a need for a new approach to conquer the problem.

**Keywords:** Coliform, Biofilm, raw milk tanks, Dairy processing equipment

# P481 - 330: INVESTIGATING THE EFFECT OF GRAM-NEGATIVE BACTERIA ON FOOD-BORN DISEASES

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**Background and Aim:** Food-born disease are the ailment because of contamination by various bacteria, viruses and unicellular organisms. The most prevalent kinds of these disease that refers to CDC results from bacteria. The most vulnerable groups to the diseases consist of young children, pregnant women, elderly and those with weakened immune system and steroid receivers.

**Methods:** This study was conducted to determine the effect of gram-negative bacteria on developing food-born diseases, and written by scrutinizing scientific sources and papers in authentic journals and databases like scholar.google.com, pubmed.com, sciencedirect.com and Iranian website including sid.ir. Finally, 20 papers published between 2000 and 2014 were collected and reviewed.

**Results:** Gram-negative bacteria causing food-born diseases involves Bacillus cereus, Campylobacter jejuni, isolated forms of E.Coli, Salmonella, Shigellosis, Vibrio vulnificus and Yersinia enterocolitica. Consuming contaminated meat, milk, vegetables and fish result in diarrhea and eating contaminated types of rice, potato, pasta and chees leads to vomiting caused by Bacillus cereus. The major causes of contaminating by gram-negative bacteria included water sources polluted by human sewage, semi-cooked cow and poultry meat and contaminated eggs and raw clams that leads to watery and sometimes bloody diarrhea, vomiting, abdominal cramps, mild fever and sometimes hemorrhagic colitis (painful, bloody diarrhea).

**Conclusion:** The main principals for avoiding contamination by gram-negative bacteria included cooking meats, poultry and vegetables completely, pasteurizing milk and dairy products appropriately, choosing hard cheeses instead of soft ones and finally paying attention to personal hygiene.

**Keywords:** Gram-Negative Bacteria, Food-Born disease, Food

# P482 - 331: INVESTIGATING THE EFFECT OF GRAM-POSITIVE BACTERIA ON FOOD-BORN DISEASES

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**Background and Aim:** Food-born disease consist of some ailments because of contamination by different bacteria, virus and unicellular organisms. The most prevalent kinds of these disease that refers to CDC results from bacteria. The most vulnerable groups to food-born diseases included young children, pregnant women, elderly and those with weakened immune system and steroid consumers.

**Methods:** This study was conducted to determine the effect of gram-positive bacteria on developing food-born diseases, and teased out by scrutinizing scientific sources and papers in authentic journals and databases like scholar.google.com, pubmed.com, sciencedirect.com and Iranian website including sid.ir. Finally, 20 papers published between 2000 and 2016 were collected and reviewed.

**Results:** Gram-positive bacteria involved in food-born diseases contain Clostridium botulinum (CB), Clostridium perfringens (CP), Listeria monocytogenes (LM), Staphylococcus aureus (SO) and Streptococcus pyogenes (SP). Contaminated canned food, particularly homemade ones, are the major reasons for CB contamination. Inappropriate method of cooking fresh or dried meats, non-pasteurized dairy products, tofu or raw vegetables, eggs and polluted sea foods are the main sources of infection by gram-positive bacteria. The dominant symptoms of CB contamination consisting fetal muscular paralysis and disturbed vision. Symptoms of developing included nausea, vomiting, gastritis, diarrhea, abdominal cramps with mild fever, pharyngitis and tonsillitis.

**Conclusion:** The main strategies to prevent developing food-born diseases included directing attention to canned food and boiling them for 20 minutes, preventing consumption of honey in infants before one year, cooking foods completely (except for SO, which is resistant to heat), appropriate food heating or disposing food residues, consuming pasteurized foods and personal hygiene.

**Keywords:** Gram-Positive Bacteria, Food-Born disease, Food

# P483 - 344: MICROBIOLOGICAL QUALITY OF DIFFERENT READY-TO-EAT FOODS ON MANUFACTURES AND HYPERMARKETS OF ALBORZ PROVINCE-IRAN

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**Background and Aim:** Nowadays, life style patterns of food consumption has been changed. So, in this study, for presentation of proper solutions regarding safety of ready to eat foods(RTE), microbiological quality of semi-cooked Frozen, raw frozen and cooked refrigerated have investigated from factory to hypermarket, on Alborz province.

**Methods:** 200 samples of ready to eat foods from 6 factories in Alborz province [50 samples (n=2) manufactures production and 50 samples (n=2) after 1-2 months' storage in hypermarket] investigated. Nutrient and sabouraud dextrose agar medias were used for bacterial total count and mold and yeast count; respectively, violet-red-bile-glucose and brilliant-green-lactose-bile agar medias were used for coliform. Peptone water and brilliant-green-lactose-bile agar and eosin methylene blue medias were used for counting and identification of E. coli and baird parker agar media was used for identification and enumeration of Staphylococcus aureus.

**Results:** Total bacterial count and coliform count in refrigerated cooked foods were lowest in comparison with others and between raw frozen and semi-cooked frozen foods were not shown significantly difference. E.coli in cooked refrigerated foods was zero and in semi-cooked frozen was higher than cooked refrigerated foods. Highest rates of S.aureus were shown in raw frozen and between the other groups was not significant statistical differentiation.

**Conclusion:** The higher level of pathogens in different RTE at factory in comparison with hypermarkets can occur due to abuse Time-Temperature during transportation and storage. So in this study considering principles of GMP and GHP and HACCP and ISO22000 at the time of manufactures producing until consumer supply is recommended.

**Keywords:** Staphylococcus aureus, coliforms, E. coli, mold and yeast, ready to eat foods, Alborz province

# P484 - 353: TOXIGENIC CLOSTRIDIUM PERFRINGENS FROM SHEEP MEAT RAW OF BUTCHERS KERMAN PROVINCE BY MULTIPLEX POLYMERASE CHAIN REACTION

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**Background and Aim:** Clostridium perfringens (C. perfringens) is an anaerobic and spore-forming bacillus that most widely distributed bacteria in the environment. This bacterium is the most rapidly growing foodborne pathogen and is found in soil, water, air, food, and intestinal tract of human and animals. The C. perfringens is classified into five types (A–E) based on the synthesis of four major lethal toxins.The purpose of this study was to identify the toxigenic isolates of C. perfringens in the sheep raw meat of Kerman province.

**Methods:** In total, 183 sheep raw meat samples were obtained and analyzed for typing C. perfringens by multiplex polymerase chain reaction (PCR). Only 23 bacterial strains diagnostic by biochemical tests and 5 C. perfringens strains were confirmed by multiplex PCR.

**Results:**C. perfringens types A and C were 80 and 20%, respectively. C. perfringens identified as a pathogen in the sheep meat raw of Kerman province.

**Conclusion:** The multiplex PCR used in this study provides a useful and reliable method for C. perfringens genotyping. Genotyping of C. perfringens is recommended in evaluating and ranking of raw meats.

**Keywords:** Meat, Diagnosis, Clostridium Perfringens, Multiplex PCR, Kerman Province

# P485 - 377: ANTIMICROBIAL SUSCEPTIBILITY OF COAGULASE NEGATIVE STAPHYLOCOCCUS ISOLATED FROM PASTRIES

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**Background and Aim:** Staphylococcus spp. are broadly divided into two groups, Coagulase Positive Staphylococcus (CPS) and Coagulase Negative Staphylococcus (CNS) sub-groups. These organisms are very common organisms capable of producing several enterotoxins (SEs) that cause intoxication symptoms in humans when ingested through contaminated food. The aim of this study was to investigate the antimicrobial susceptibility pattern of Coagulase Negative Staphylococcus isolated from pastries collected in from different part of Isfahan, center of Iran.

**Methods:** A total of 55 pastries were collected and analyzed from September to December 2015. All samples were sub-cultured on Blood agar and incubated at 37. Then, phenotypic methods and the molecular method (16s rRNA) were used for identification CNS isolates. Furthermore, antimicrobial susceptibility test was performed by the disc diffusion method on Mueller – Hinton Agar according to CLSI guideline.

**Results:** Our results showed, out of 55 samples of pastries, 26 (47.3%) of Coagulase Negative Staphylococcus were isolated. The CNS isolates were susceptible to rifampicin (100%), levofloxacin (100%), ciprofloxacin (100%), gentamicin (100%), and clindamycin (100%). Also, half of the isolates were resistant to penicillin (50%) and erythromycin (12 %) respectively. In addition to, the rate of methicillin-resistant were 24%.

**Conclusion:** The investigation highlighted that these organisms are very common and constitute a potential risk for consumers' health and are an important safety concern for food industry. The isolates were more susceptible to gentamicin, ciprofloxacin, and clindamycin. Further studies on molecular characterization of resistant strains of S. aureus from poultry meat in Keffi should be carried out.

**Keywords:** Staphylococcus, Pastry, Antimicrobial Susceptibility

# P486 - 385: INVESTIGATION THE PREVALENCE OF LISTERIA MONOCYTOGENES IN DISTRIBUTED CHICKENS AT STORES OF AHVAZ CITY

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**Background and Aim:** Listeria monocytogenes is a gram positive, non-spore forming and motile bacteria. This bacteria tolerate low temperatures, broad range of pH and high concentrations of salt, too. These features allow this organism to proliferate in various conditions. Listeria monocytogenes cause disease in traps. This bacteria is an opportunistic and intra-cellular bacteria which because the development of human infections from foods (e.g. meat, poultry) have a lot of importance around the world and is known as a major human pathogen and causing agent of listeriosis. This disease is zoonosis and is mainly caused from contaminated food products.

**Methods:** In this survey, chicken skin's samples around the Ahvaz city were collected and transported to the laboratory, then enriched in broth medium. Following, in order to purification, samples were cultured and passage was performed from suspected colonies. Thereafter, using biochemical tests (e.g. catalase, sucrose) colonies were identified. In order to final identification, PCR was used.

**Results:** With respect to failure the completion of project, the detailed results are not ready but these results will prepare until the presentation.

**Conclusion:** Listeria causes Listeriosis disease in susceptible people. It may even lead to the death in these cases. Therefore, this study aims to determine the abundance of the bacteria existing in the food. This study was carried out to finally control this disease to some extent with conducting the preventive measures and sanitation principles as well as informing public about the appropriate use of the food which is highly important.

**Keywords:** Listeria monocytogenes, food, PCR

# P487 - 386: ASSESSMENT OF MICROBIAL CONTAMINATION IN READY- TO- EAT VEGETABLES AND SALADS

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**Background and Aim:** Minimally processed vegetables are ready-to-eat (RTE) products very attractive to consumers looking for healthy and convenient meals. However, the microbiological safety of these foods is one of the special concern due to the absence of lethal treatments during processing. For this reason, according to the biological safety of food to prevent food-borne diseases and outbreaks of food is important. Aim of this study was to evaluate the microbial contamination of ready to use vegetables and salads.

**Methods:** In this cross-sectional study, 146 samples of vegetables and salad were collected in the food and drug administration of Tehran University of Medical Sciences in 1395.The samples were examined according to the Iranian national standard include Microbial total count, coliform, enterococcus faecalis, mold, parasites and identify E. coli .

**Results:** In Total samples sent, 68 percent of the samples had bacterial contamination while the parasite samples not seen. most contamination include total count of microorganisms (61%) and mold contamination (8.1%) is the lower. amount of Contamination with fecal coliform bacteria (21%), Escherichia coli (19%) and Enterococcus faecalis (15%) was observed. The number of samples with multiple microbial contamination was reported in approximately 27%.

**Conclusion:** Because of the high incidence of microbial contaminants, especially coliform in the sample studied, considering all the process related to irrigation and cultivation and harvesting as well as to avoid causing contamination in the process of washing and packaging be recommended.

**Keywords:** Vegetables, outbreak, food born disease

# P488 - 387: ANTIBACTERIAL EFFECT OF AQUEOUS AND ETHANOLIC EXTRACTS OF SPIRULINA PLATENSIS

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**Background and Aim:** The aim of this study was to investigate the effects of Spirulina platañis micronutrient algae on some gram positive and negative bacteria.

**Methods:** Spirulina Platensis microalga was obtained by maceration (soaking) method then the antibacterial activity of essential oils on two strains of Staphylococcus aureus and Proteus was determined by broth microdilution method.

**Results:** The minimum average of an inhibitory concentration of essential oils was determined 2 mg/ mL for gram-positive bacteria and 1 mg/ mL for gram-negative bacteria. Minimum inhibitor concentrations in aqueous essential oils were also determined for gram-positive bacteria and gram-negative bacteria were determined to be 4 mg/mL.

**Conclusion:** Spirulina Plutansis micronutriental algae and essential oils have an appropriate antimicrobial function against gram positive and negative bacteria.

**Keywords:** Spirulina platensis, Antibacterial effect, Aqueous extract, Inhibitory effect

# P489 - 391: STUDY OF KOUPEH SHEEP CHEESE CONTAMINATION TO AFLATOXIN M1 IN MAHABAD CITY USING ELISA

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**Background and Aim:** One of the most contaminations in cheese made by raw milk is mycotoxins, especially Aflatoxin M1 that is seen after milk contamination to this toxin. The objective of this study was to determine the aflatoxin M1 residues in a cheese produced from sheep's milk with the traditional method called Koupeh cheese in the spring and summer seasons in Mahabad city-Iran.

**Methods:** A total of 48 samples of Koupeh sheep cheese were collected randomly during the spring and summer.The samples were kept in sterile containers in the freezer(-24°c). The ELISA method was used to determine the residues of Aflatoxin M1. The ELISA kit was provided by Ridascreen® Germany R-Biopharm.

**Results:** The results found that all samples contained measurable values of Aflatoxin M1. 8.33% (2 of 24 samples) in summer and 16.6% (4 of 24 samples) in spring indicated higher residues comparing to the standard level in Europe (250ng/kg). Also the products were processed in summer contained less amount of aflatoxin M1.

**Conclusion:** According to the results of recent study, it can be admitted that the local cheese contamination to aflatoxin in Mahabad is undesirable and considerable measures should be taken to control the contamination of aflatoxin M1 in dairy products. It is recommended that more accurate studies be done about the diet of livestock in order to reduce aflatoxin B1, so that reduce the AFM1 level in milk subsequently.

**Keywords:** Aflatoxin M1, Koupeh sheep cheese, ELISA

# P490 - 394: RECOGNITION OF CLOSTRIDIUM BOTULINUM BACTERIA IN NUTRITION INDUSTRIES

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**Background and Aim:** Botulinum toxin produced clostridium bacteria and injected for permanent paralysis of muscles. Clostridium botulinum is species of a bacteria made of clostridium. This bacterium is bar- form, warm and positive that grows better in less oxygen (non- aerobic) position. Botulism is a rarely illness but virulent potentially, usually, there isn't fever and the symptoms of this illness are: decrease sense, nausea, vertigo, purblind, lower eye-lid and vomit. The study to investigated clostridium botulinum bacteria in nutrition and some conserve.

**Methods:** This study is a academicals and libraries that the effect of clostridium botulinum bacteria in nutrition industries searched and the methods to prevention it investigated.

**Results:** Many families believe that clostridium botulinum bacteria grow just in species of conserve fish tone but according to reporter medications site for non- boundary, in spite of public, this bacterium grows in meat, meaty productions, vegetables and the foods prepared in home, addition to fish tone.

**Conclusion:** Clostridium botulinum toxin is sensitive to heat, tin that transfer from vegetable cane into food and prevent the growing of organism and product of toxin. To prevent the botulinum prevalence, it is necessary prohibit the consume baked food that didn't expose heat well and boiled the doubtful food at 15 minutes, at least.

**Keywords:** Recognition, clostridium botulinum, nutrition industry

# P491 - 405: REVIEW ON BACTERIAL FOODBORNE DISEASE

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**Background and Aim:** The majority of foodborne disease is transient and self-limited. Many of the diagnoses are clinical and do not require confirmatory laboratory tests

**Methods:** However, patients presenting with inflammatory and bloody diarrhea should have an etiologic diagnosis made since empiric antibiotic therapy may be dangerous in patients infected with STEC

**Results:** While unusual, infection with some foodborne agents, such as C. botulinum, L. monocytogenes, or V. vulnificus, can be rapidly life-threatening and speedy therapy may be life saving.

**Conclusion:** Maintaining an open mind in relation to the plethora of presentations of foodborne disease and remembering to ask about food exposures are both key elements in the diagnosis of foodborne diseases

**Keywords:** Foodborne, infection, bacterial

## P492 - 411: BIOPROTECTIVE CULTURES IN FRESH MEAT: A REVIEW

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**Background and Aim:** Foodborne infection is a main public health problem and a common cause of illness and death in the worldwide. The awareness of chemical preservative side effects improved public attention to consume foodstuffs with natural preservers such as probiotic bacteria.

**Methods:** For this review-based article, several journals and articles were evaluated . English-language articles were screened with considering these key words: foodborne pathogen, probiotic, Bacteriocinogenic, lactic acid bacteria, food.

**Results:** The strains most frequently used as probiotics consist of lactic acid bacteria (LAB) and bifidobacteria. Lactobacilli are believed to interfere with pathogens by several mechanisms, including the production of antimicrobial compounds, such as organic acids, dihydrogen peroxide, or bacteriocin-like substances. Bacteriocins are ribosomally-synthesized peptides or proteins with antimicrobial activity, produced by different groups of bacteria. LAB have played beneficial roles in food protection due to the ability of some strains to disappoint the growth of spoilage and pathogenic organisms without producing undesirable organoleptic changes. Numerous LAB associated with meat products are important natural bacteriocin producers. Bacteriocins are proteinaceous antagonistic substances that are important in the control of spoilage and pathogenic microorganisms.

**Conclusion:** The awareness of chemical preservative side effects improved public attention to consume foodstuffs with natural preservers such as probiotic bacteria. The use of LAB as bioprotective cultures to extend the shelf life of fresh meat can improve microbial stability and safety in commercial meat preservation. LAB have a major potential for use in biopreservation because they are safe for human consumption and are the predominant microflora during storage in numerous foods.

**Keywords:** Biopreservation, Raw meat, Bacteriocins, Lactic acid bacteria, Probiotics

# P493 - 421: BIOCHEMICAL CHARACTERIZATION OF VARIOUS STRAINS OF PSEUDOMONAS TOLAASII THAT CAUSES MUSHROOM BROWN BLOTCH DISEASE IN IRAN

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**Background and Aim:** The button mushroom (Agaricus bisporus) is the most common cultivated mushroom around the world. It has a very pleasant taste and culture easy. The causal agent of brown blotch disease in turn, led to serious losses in crop yield. In fact, brown blotch disease or bacterial blotch is one of the most important cultivated mushrooms bacterial diseases in the world with significant annual crop loss.

**Methods:** Pathogenic bacteria were isolated from the tissues of mushroom fruiting bodies that were severely damaged by brown blotch disease. The collected mushroom tissues were homogenized with sterilized distilled water. The homogenate was evenly spread on Pseudomonas agar F plate. Pathogenic Pseudomonas species were isolated and identified using the white line and pitting tests, and bacteriological characteristics were analyzed using the method of Tsuneda. A standard set of physiological and biochemical tests were performed for differentiation of strains, including evaluation of growth on KB medium, growth in 2% NaCl, acid production from melezitose, sucrose, manitol, mannose, arabiyol, glucose, utilization of tartrate and malonate, motility at pH 7.0, citrate utilization, and oxidase reaction.

**Results:** Forty five strains were obtained belonging to the genus Pseudomonas. Of these, 30 isolates belonged to P. tolaasii. LOPAT tests were performed for all isolates. On KB culture medium, the Pseudomonads produced diffusible fluorescent pigment. P. tolaasii colonies were produced bluish diffusible pigment and reactants colonies were produced greenish pigment.

**Conclusion:** Based on morphological, biochemical and physiological properties the strains that that causes mushroom brown blotch disease in Iran were identifeied as P. tollassi.

**Keywords:** Biochemical properties, Pseudomonas tollassi, fluorescent pigment, mushroom

# P494 - 426: ANTIMICROBIAL EFFECTS OF THYMES SHIRAZI HYDRO ALCOHOLIC ESSENTIAL OIL AND PISTACIA KAZERONI OIL ON STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Today, the antimicrobial activity of plant essential oils is well defined and is used as an appropriate alternative in the food industry to control food pathogens. Due to the antibacterial activity of the extracts and their effectiveness against microorganisms, the aim of this study was to investigate the antibacterial activity of Pistacia Kazeroni and Thymes Shirazi to control bacterial pathogens.

**Methods:** In this experimental study, a series of Kazeroni pistacia oil and essential oil from Thymes Shirazi were performed using percolator method. The antimicrobial effect of the extract was measured using a well of Agar, minimum inhibitory concentration, and minimum degradation concentration by microdilution method on standard bacteria. We performed three replications and data were analyzed using SPSS version 16 software and T-test.

**Results:** In this study, the lowest inhibitory concentration of Thymes Shirazi was observed on the tested microorganism equal to 5.5 mg / mL. Also, the maximum diameter of the inhibition zone was 12 mm. However, there was no inhibitory effect on Pistacia Kazeroni oil.

**Conclusion:** The Thymes Shirazi essential oil has a good control over the growth of food-borne pathogens, which can be used as an appropriate preservative for food storage, compared to Pistacia Kazeroni oil.

**Keywords:** Staphylococcus aureus, Pistacia Kazeroni oil, Thymes Shirazi

# P495 - 430: THE COMPARATIVE STUDY OF THE MOLECULAR SPECIES OF ANIMAL FEED AND POULTRY INFECTED WITH AFLATOXIN IN GONAABAD

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**Background and Aim:** In line with the human use of livestock and poultry products, and to economically using these products, preventing dangerous toxin Aflatoxin from the mold Aspergillus is important. So, the comparative study of the molecular species of animal feed poultry infected with aflatoxin was done.

**Methods:** Sampling was done in two livestock and poultry feed factory in two seasons, three times, and they were cultivated in 1- solid sample was disinfected 2- solid sample was non-disinfected 3- suspension sample was cultivated in Sabouraud dextros agar containing Chloramphenicol. The result of this cultivation was examined by molecular and diagnostic tests with the use of PCR method and their species were determined based on gene sequencing of benatolin.

**Results:** From the total fungus derived from cultivating 24 samples in two factory, respectively on average they were 27.25 and 31.70 Aspergillus genus. The results of mixed cultivation showed significant difference between the factory of poultry feed (p=0. 017), mixed poultry and livestock feed (p=0. 008). The PCR results determined Aspergillus flavus, Aspergillus parasiticus, Aspergillus versicolor.

**Conclusion:** Data analysis was done with SPSS and T tests separately. Poultry feed compared with livestock feed was more contaminated with Aspergillus species producing mycotoxins, including Aflatoxin.

**Keywords:** Animal feed and poultry, Aspergillus, Aflatoxin, Gonaabad

# P496 - 446: INVESTIGATING THE EFFECT OF NON-BACTERIAL MICROORGANISMS ON DEVELOPING FOOD-BORN DISEASES

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**Background and Aim:** Food-born diseases defies as ailments caused by bacterial, virus and unicellular organism contamination. Although bacteria are the main reason for these diseases, the other microorganisms could have a role. The people who almost always develop the diseases included young children, pregnant women, elderly, patients with cancer or receiving chemotherapy, hepatic disease, achlorhydria, those with weakened immune system and steroid receiver.

**Methods:** This study was conducted to determine the effect of non-bacterial organisms on developing food-born diseases, and written by investigating scientific sources and papers in authentic journals and databases like scholar.google.com, pubmed.com, sciencedirect.com and Iranian website including sid.ir. Eventually, 20 papers published between 2000 and 2016 were collected and reviewed.

**Results:** Some types of unicellular organisms and viruses could result in food-born diseases. Unicellular organisms such as Cryptosporidium parvum, Giardia and cyclospora and viruses like neurovirus, retrovirus and adenovirus have a role in expressing side effects of these diseases. Expressing the side effects takes time 2-10 days and 12-48 hours for unicellular organisms and viruses, respectively. Food contamination and lack of hygiene have role in contamination by unicellular organism and causes watery diarrhea, nausea, vomiting, mild fever and abdominal cramps. However, air pollution play a role in contaminating by mentioned viruses that beside above side effects leads to fever and muscular pain.

**Conclusion:** Prevention is the best method to avoid contamination. Personal hygiene and nutritional/medical recommendations to enough intake of fluids and electrolytes to prevent dehydration caused by probable severe diarrhea and vomiting. The side effects are sever, while the duration often is short.

**Keywords:** Unicellular Organism, Food-Born disease, Virus

# P497 - 447: IDENTIFICATION OF TRICHODERMA ISOLATES ON NORTH WEST IRAN MUSHROOM FARMS

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**Background and Aim:** Green mold disease (causal agent, Trichoderma) has resulted in severe crop losses on mushroom farms worldwide in recent years. Trichoderma spp. are soil inhabiting filamentous fungi, belongs to the genus Hypocrea. Most species are considered indicators of compost quality or horticultural practices.

**Methods:** Samples were collected during farm visits or were received from mushroom growers from May 2016 to March 2017. These were used as inoculate on malt extract agar plates MEA containing 0.78 g of streptomycin sulfate per liter. Morphological observations were made from cultures grown on 2% MEA (malt extract agar) at about 24°C under ambient laboratory conditions of diffuse daylight. The microscopic characteristics were observed for the more complex conidiophores developing from the characteristic tufted or pustulate areas of conidiation. Identifications were performed by using the identification keys provided by Rifai and Bissett 1995, and confirmed by comparison with cultures of ex type strains from the CCFC.

**Results:** Four species were represented in 40 isolates from mushroom farms. T. harzianum, T. atroviride, T. citrinoviride, and T. longibrachiatum were the most common species in this sample. Subtle morphological variation was noted among isolates of some species. Three morphologically discernible phenotypes (designated A, B, and C) were noted for T. harzianum. Multiple morphological phenotypes were also observed for T. atroviride and T. longibrachiatum.

**Conclusion:** The most common group comprised approximately 44% of the isolates and was identified as a strain of Trichoderma harzianum. This group was consistently recovered from farms with severe green mold disease but not from farms with little problem.

**Keywords:** Trichoderma, filamentous fungi, Mushroom Farms, microscopic characteristics

# P498 - 466: A SURVEY ON RESIDUES OF AFLATOXIN M1 IN LORK; AN IRANIAN TRADITIONAL DAIRY PRODUCT, USING ELISA

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**Background and Aim:**Aflatoxin M1 as a carcinogen toxin is a hydroxylase form of AMB1may be presence in milk and its product following the animal consumption of bread and fodder contaminated by moulds. The main purpose of this survey is to determine the residues of Aflatoxin M1 in the samples of Lork cheese as a traditional cheese in the south of the West Azerbaijan province-Iran.

**Methods:** 22 samples were collected randomly from the three cities in the south of W.A. province during the spring and summer and were kept in sterile containers in freezer (-24°c). The ELISA method was used to determine the residues of AFM1 in Lork samples and the kit used for this test was provided by Ridascreen® R-Biopharm-Germany.

**Results:** The statistical analysis of data determined that all samples were contaminated with Aflatoxin. Among the samples, only 9% samples in summer and 25% of samples in spring indicated higher residues comparing to the standard level in Europe (250ng/kg). There is a significant difference between the amount of contamination in spring and summer ($p<0.05$).

**Conclusion:** The results determined that AFM1 level in the dairy products is affected by season and the residue of AFM1 in Lork in summer is less than spring that this is due to using of fresh forage and free grazing in the summer that with less moulds and AFB1 contamination. Also AFM1 contamination of Lork is undesirable. Therefore effective measures should be taken to control Aflatoxin M1 contamination in dairy products especially in local cheese.

**Keywords:** Aflatoxin M1, ELISA, Lork Cheese

# P499 - 473: METHANOL EXTRACT OF MENTHA PIPERITA AS ANTIMICROBIAL AGENT

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**Background and Aim:** Mentha piperita is a hybrid mint, a cross between water mint and spearmint. The plant is now widespread in cultivation in many regions of the world.

**Methods:** We collected Mentha piperita in September 2016 from south west of Marivan. Extraction methanol was performed with a Soxhlet apparatus. The extract was concentrated using a rotary evaporator. The antimicrobial activity of the sample was examined against a set of twelve microorganisms. The microbial strains sensitive to the plant in disc diffusion assay were studied for their minimal inhibitory concentration (MIC) values using micro-well dilution assay method. Gentamicin and Rifampin were examined as positive controls and DMSO as negative control. Each assay was repeated twice.

**Results:** The methanol extract of Mentha piperita (ME-MP) showed activity against S. epidermidis, C. albicans and S. aureus. The sample showed moderate to great antimicrobial activities with inhibition zone diameter from 12 to 23. The samples exhibited varied activity against the tested microorganisms with MIC ranging from 15.625 to 31.25 µg/ml.

**Conclusion:** The results suggest that the extract seem to be alternative antibacterial agents to antibiotics and have the ability to overcome the bacterial resistance against antibiotics.

**Keywords:** Mentha piperita, Antimicrobial activity, Plant extract, Antibiotics

# P500 - 474: EXTRACT FROM MENTHA LONGIFOLIA AS NATURAL ANTIMICROBIAL

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**Background and Aim:** Mentha longifolia is a species in the genus Mentha (mint) native to Europe, western and central Asia (east to Nepal and the far west of China), and northern and southern (but not tropical) Africa.

**Methods:** This plant was collected in August 2016 from southwest of Marivan. Extractions methanol were performed with a Soxhlet apparatus. The extract was concentrated using a rotary evaporator. The antimicrobial activity of the sample was examined against a set of twelve microorganisms. The samples investigated for antimicrobial activity by agar well diffusion method.The microbial strains sensitive to the plant in disc diffusion assay were studied for their minimal inhibitory concentration (MIC) values using micro-well dilution assay method. Gentamicin and Rifampin were examined as positive controls and DMSO as negative control.

**Results:** The results showed that the sample had antimicrobial activity against p. aeruginosa, S. epidermidis, B. subtilis and A. brasilienis. The inhibition zone diameter for the sample was between 11-21 mm. The samples exhibited activity against the tested microorganisms with MIC 31.25 µg/ml.

**Conclusion:** Results of present study indicated that extract of Mentha longifolia had significant antimicrobial activity. These studies suggest that Mentha longifolia may be a promising source for novel antimicrobial agents.

**Keywords:** Mentha longifolia, Antimicrobial activity, Plant extract

## P501 - 488: THE EFFECT OF LIPASE IN MICROBIAL BIOTECHNOLOGY

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**Background and Aim:** According to recent studies, one of the most used enzymes is lipase which has been applied in biotechnological industry and is used as a vital catalyst for the catalytic reactions such as hydrolysis bioconversion, esterification and interesterification. Lipase (triacylglycerol EC 3.1.1.3) hydrolyses triacylglycerol to fatty acids and glycerol. Lipase activity at high temperatures, and broad range of pH, in organic solvents, is the most important features of this enzyme for industrial applications and microbial biotechnology. Microbial lipase is more active than animal and plant lipase and is used widely in food products. Microbial lipase is applied in fermentation processes based on techniques such as PCR, and is used massively in fermentation industries. Due to stereoselectivity property of lipase, its applications have been increased in the food industry.

**Methods:** In this study, near to 30 articles have been reviewed, from 2005 to 2017.

**Results:** Lipase, as a biosensor in flavorings and food industry plays an important role. Remarkably, this enzyme is used in the food biotechnology industry such as, dairy, oil, and cheese, milk, sauce making, fermented vegetables, and bakery, medical and pharmaceutical industries.

**Conclusion:** Todays, with the development of new technologies, genetic engineering of lipase can be used to increase production and purification of this enzyme.

**Keywords:** Lipase, Food, Biotechnology, Fermentation processes

# P502 - 505: EFFECTS OF ROSEMARY ESSENTIAL OILS AS A PRESERVATIVE IN HYPOPHTHALMICHTHYS MOLITRIX FILLETS

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**Background and Aim:** The increased demand for more herbal and natural food motivates many researchers to investigate the preservative effects of natural compounds. Rosemary (Rosmarinus officinalis) is a spice and medicinal herb widely used around the world. Rosemary extract has been widely used as a preservative in the food industry, due to its antioxidant activity. The main objectives of this study were to examine the effect of rosemary leaf essential oils on sensorial quality of Hypophthalmichthys molitrix fillets and its antimicrobial effect on some bacterial strains.

**Methods:** Essential oils were prepared by hydrodistillation using of clevenger apparatus. Essential oils were tested for antimicrobial activities by disc diffusion methods on Escherichia coli and Staphylococcus aureus. Fresh fillets were injected with different concentrations of essential oil at concentrations of 1, 2, 3, 4, 5 and 6 µL/g. Fillets were then steamed for 15 minutes and were evaluated by trained panel from the university.

**Results:** The results showed that the remarkable inhibition of the bacterial growth was shown against the gram positive strain. The results of the sensory evaluation showed that addition of essential oils into fillets (2 µL/g) had positive effects on sensory properties of the fillets (general acceptability). Taken together, our data indicated that rosemary had inhibitory effect on tested bacterial strains and increased sensorial properties of the fillets.

**Conclusion:** Therefore, this plant would be an interesting topic for further study and possibly for preservative in the fish products.

**Keywords:** Rosemary, Hypophthalmichthys molitrix, sensorial quality, essential oils

# P503 - 509: RAPID MOLECULAR DIAGNOSIS OF LACTOBACILLUS DELBRUECKII IN SOME PROBIOTIC, STARTER AND DAIRY PRODUCTS

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**Background and Aim:** Lactobacillus delbrueckii is gram positive, optional aerobic and anaerobic, catalase positive, and oxidase negative which are used as starter cultures in fermented dairy products such as yoghurt, cheese in food industry . Moreover, Lactobacillus delbrueckii is classified as probiotics which cause health effects on the body. The aim of this study is molecular rapid detection of Lactobacillus delbrueckii in probiotic products and various samples.

**Methods:** PCR test was optimized by using standard Lactobacillus delbrueckii strain. Limit of detection (LOD) and specificity of this test were investigated by using related species DNA. A total of 84 samples included 50 raw milks,25 probiotic products and 9 starters were collected from Iran market DNA extracted with boiling/DNG method, and then PCR carry out on samples.

**Results:** Amplicon 1065 bp was amplified with PCR and observed by electrophoresis method. In specificity test none of them were positive by DNA of intended organisms. Best DNA extraction is boiling in addition DNG-Plus methods. Lactobacillus delbrueckii species were identified in 25 raw milks and some probiotic samples used by PCR method.

**Conclusion:** According to the results of this study, It can be concluded that the PCR method is reliable and accurate to identify Lactobacillus delbrueckii in starters, dairy and probiotic products.

**Keywords:** Lactobacillus delbrueckii, PCR, Detection, probiotics

# P504 - 512: EVALUATION OF THE PARASITES PRESENCE IN THE CONSUMED VEGETABLES FROM THE CITY OF YAZD, IN 2011-2012

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**Background and Aim:** Various types of parasites could be found in types of vegetables that might be a big threat to our health. The main aim of this research was to assess the different parasites in the 400 total random samples of the raw vegetables in the city of Yazd, in 2011-2012 periods.

**Methods:** The well-known parasite assessment methods; floatation and formalin- Ether techniques have been used. The frequencies of aforementioned parameters were divided based on the store locations, vegetables types, and sampling season.

**Results:** The highest frequency of soil nematodes and Parasitic Worm Eggs were for Chives and Leeks, where the highest rate of non-human parasite eggs was for the mints and Chives. Regarding the sampling season, the soil nematodes and Parasitic Worm Eggs were very common in winter and autumn respectively, but the highest percentage for nonhuman parasite eggs was recorded in summer.

**Conclusion:** The results represented that frequency of each types of vegetables is related to the types of the parasite and is not common in all types of the vegetables.

**Keywords:** Vegetables, Parasites, Parasitic infection

# P505 - 515: INVESTIGATION OF AMINOGLYCOSIDE RESISTANCE IN BIFIDOBACTERIA ISOLATED FROM DAIRY PRODUCTS IN SANANDAJ

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**Background and Aim:** Bifidobacteria are Gram-positive, stickily anaerobic, non-motile species which produce lactic acid and take a big part of the intestine of humans and other animals. These bacteria play an important role in limiting the exogenous and pathogenic colonization in humans. Species of bifidobateria used as probiotics in dairy industry and have very important role in effective treatment and human health.

**Methods:** In this study, for detection of B. bifidus which used as one of the main probiotic bacteria, four dairy produst choosed from four different dairy manfacture and isolated using determination species and phonotypic tests and were selected to evaluate the resistance to different types of aminoglycoside antibiotics. Conducted method for this research was for identifying ACC1-1, APH6 and APHA1 gene as important gene involved in aminoglycoside resistance based on molecular and biochemical test. After confirming the desired specie using biochemical tests, resistance to aminoglycoside antibiotics assessed with e.test method and consequent antibiogram results. Also, the frequency of resistant gene in cultures was evaluated by specific designed primers in PCR and different strain recognized.

**Results:** Results revealed that, approximately 20% collected samples showed resistance to used antibiotics and ACC1-1 had highest frequency among them. Also, resistant strains with multiple gene were observed in our results.

**Conclusion:** Results revealed that, approximately 20% collected samples showed resistance to used antibiotics and ACC1-1 had highest frequency among them. Also, resistant strains with multiple gene were observed in our results. Data revealing the presence of aminoglycoside resistance genes in different samples with different frequency.

**Keywords:** Bifidiobacteria, Resistance, Antibiotics, Aminoglycoside, Polymerase chain reaction.

# P506 - 517: ASSESSMENT OFMICROBIOLOGICAL QUALITY OF TRADITIONAL SWEETS IN YAZD IRAN IN 2017

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**Background and Aim:** Food poisoning is one of the most common reason for Diseases in developing countries these days .Sweets are so disposed for being corrupt because of its suitable condition for growth of microorganisms. The aim of this study was to Assessment the microbiological quality confectionery products during productionor preservation.

**Methods:** This cross-sectional study was conducted on 359 samples of traditional Sweets supplied in Yazd confectionaries, which were selected random.The samples were tested for microbial contamination such asEscherichia coli, Enterobacteriaceae, yeasts, and molds, which werebased on the Iranian national standards.

**Results:** According to the results, the prevalence rate of microbial contaminated samplesWas18.1 (n=65). Furthermore, the “Baqlava” and “pashmak”had the highest (46.4%) and lowest (0%) prevalence rates of microbialcontamination, respectively. Additionally, the prevalence rate of contaminationto Escherichia coli,Enterobacteriaceae,Molds, and Yeasts were 24.6%, 18.4%,18.4%, and 1.6%, respectively.

**Conclusion:** Microorganisms in selected confectionary products during the manufacturing process can be reduced by control of raw materials, processing and environment because they are critical factors in the prevention of microbial contamination in confectionery.

**Keywords:** Yazd, Traditional Sweets, food contamination

# P507 - 520: SURVEY OF TRADITIONAL ICE CREAM CONTAMINATION TO ESCHERICHIA COLI AND ENTEROBACTERIACEAE IN YAZD, IRAN DURING 2015- 2016

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**Background and Aim:** The making of unpasteurized ice cream known as Traditional Ice Cream is usual in Iran. This study was carried out to test microbial contaminationin traditional ice creams to Escherichia coli and Enterobacteriaceaeas factors of contamination in Yazd city.

**Methods:** In this study, 117 ice cream samples were taken randomly from different area in Yazd city in summer months. The samples were transported to food laboratory and analyzed for microbial contamination.

**Results:** Results revealed that the contamination level of ice cream to Escherichia coli and Enterobacteriaceae were 9% (n= 11) and 38% (n= 44), respectively. About 8 (n= 9) percent of total samples were contaminated higher than standard level. Enterobacteriaceae contamination in ice cream was extremelymore than E. coli contamination.

**Conclusion:** Statistically significant relationships were observed between level of contamination and staff's literacy, personal hygiene, and sanitation of workplaces.The results represented thatMilk pasteurization, promoting personal and environmental hygiene through health education is required to prevent poisoning occurrence caused by the consumption of unhealthy ice cream.

**Keywords:** Ice cream, Enterobacteriaceae, Escherichia coli

# P508 - 535: EFFECTS OF TRACHYSPERMUM COPTICUM ESSENTIAL OILS AS A PRESERVATIVE IN CYPRINUS CARPIO FILLETS

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**Background and Aim:** There is growing scientific evidence of the potential use of plant essential oils as natural preservatives. Trachyspermum copticum (Ajowan) is one of the aromatic seed spices which generally used for medicinal purposes. Thymol, is the main phenolic compound in Ajowan, and has been shown to possess antimicrobial activity. The main objectives of this study were to examine the effect of Ajowan seeds essential oils on sensorial quality of Cyprinus carpio fillets and its antimicrobial effect on some bacterial strains.

**Methods:** Essential oils were prepared by hydrodistillation using of clevenger apparatus. Essential oils were tested for antimicrobial activities by disc diffusion methods on Escherichia coli and Staphylococcus aureus. Fresh fillets were injected with different concentrations of essential oil at concentrations of 1, 2, 3, 4, 5 and 6 µL/g. Fillets were then steamed for 15 minutes and were evaluated by trained panel from the university. The results showed that bacterial strains sufficiently suppressed by the oils with inhibition zone diameters ranging 40mm (E. coli) and 48mm (S. aureus).

**Results:** The results of the sensory evaluation showed that addition of essential oils into fillets (3 µL/g) had positive effects on sensory properties of the fillets (general acceptability). Taken together, our data indicated that Ajowan had inhibitory effect on gram-negative and gram-positive bacterial strains and increased sensorial properties of the fillets.

**Conclusion:** Therefore, this plant would be an interesting topic for further study and possibly for preservative in the fish products.

**Keywords:** Ajowan, Cyprinus Carpio, Sensorial Quality, Essential Oils

# P509 - 574: DETERMINATION OF FREQUENCY OF VIBRIO INFECTION IN PROCESSED SEAFOOD

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**Background and Aim:** Sea foods are prone to bacterial contamination and could cause health risk to the consumers.

**Methods:** To examine fish distributed in shiraz, samples collected were tested for possible prescnce of Vibrio spp. Twenty-live grams of ho mogenized sample diluted with225mililitre of alkaline peptone water contain and remained in37"C for6- 8h. After primary enrichment, TCBS was used as selective medium for separation of Vibrios colonies. Vibrio spp. were separated from many samples.

**Results:** The results showed that no samples of vibrio Spp. were found in the samples prepared from restaurants.

**Conclusion:** The results can be attributed to the high boiling temperature.

**Keywords:** Vibrio, culture, Frequency

# P510 - 649: REDUCING MICROBIAL CORRUPTION AND INCREASING FOOD SECURITY WITH THE BIODEGRADABLE PACKAGING APPROACH

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**Background and Aim:** Plastics are considered as one of the major environmental pollutants which Polyethylene is used as a high-capacity plastics in most industries, especially in the packaging industry, with the largest share of pollution in the packaging industry. The production of biodegradable and edible plastics facilitates their decomposition by natural disintegrators.

**Methods:** In general, there are two types of biodegradable plastic : A mixture of natural and synthetic plastics, such as the production of film from a mixture of starch and polyethylene, which is somewhat discarded after a while, is decomposed and the plates that are completely destroyed include carbohydrates, proteins, and lipids, the lipid layer is deposited on the polymeric or polysaccharide layer as a substrate, and lipid materials are propagated in the protein and polysaccharide matrix and The emulsion film comes in .

**Results:** Food films and coatings inhibit gaseous exchanges and inhibit the transfer of stomach compounds and can also act as carriers for various additives and compounds such as anti-microbial agents and antioxidant properties.

**Conclusion:** These macromolecules can be a suitable alternative to synthetic polymers derived from petroleum derivatives. Active packaging that plays an antimicrobial role prevents the growth of pathogenic and corrosive microorganisms in foods and increases their shelf life and safety.

**Keywords:** Biodegradable, Food packing, Anti-bacterial, Food security

# P511 - 650: PREVALENCE AND ANTIBIOTIC RESISTANCE OF SHIGA TOXIGENIC ESCHERICHIA COLI ISOLATED FROM DAIRY PRODUCTS IN KASHAN, IRAN

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**Background and Aim:** Raw-milk products such as traditional cheese, ice cream and yoghurt can be a main source of potentially harmful bacteria to human, such as Escherichia coli. In Iran, traditional milk products are consumed, especially in some rural and urban areas. Shiga toxigenic E. coli (STEC) strains as emerging groups of foodborne pathogens are responsible for most foodborne illnesses. The aim of this study was to determine the antibiotic resistance pattern in STEC isolated from traditional milk products and their molecular characterization.

**Methods:** A total of 116 samples were randomly purchased from local markets in Kashan, Iran and evaluated for the occurrence of STEC by culturing and molecular methods. The antibiotic resistance of obtained isolates was determined by Kirby Bauer method. Also, isolates were assayed for the presence of Shiga toxins (stx1 and stx2) and intimin gene (eae).

**Results:** The incidence of E. coli in 60 ice cream, 30 yoghurt and 26 cheese samples were 8.33%, 10% and 11.54%, respectively. The findings showed that 11 out of 11 (100%) E. coli had both stx1 and stx2 while eae gene was not found in E. coli isolated of traditional milk products. For E. coli strains carrying stx1 and stx2, highest antibiotic sensitive levels were related to trimethoprim/sulfamethoxazole, norfloxacin, chloramphenicol and ciprofloxacin, respectively.

**Conclusion:** The results showed relationship between presence of virulence factors and antimicrobial resistance. These results can be used for further studies on STEC as an emerging foodborne pathogen.

**Keywords:** Escherichia coli, Milk products, Molecular characterization

# P512 - 669: INVESTIGATION OF BACTERIAL CONTAMINATION OF KUBIDEH KEBAB SUPPLIED IN KHODABANDEH CITY

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**Background and Aim:** Foodborne diseases are one of the most common problems in the health and public health sector. In the meantime, bacteria are among the most important causes of infectious diseases and food poisoning. The present study was conducted to determine the contamination of cooked kebab in Khodabandeh city with Staphylococcus aureus and Escherichia coli bacteria.

**Methods:** In the different seasons, 90 samples were collected in the summer, autumn and winter in year 2016 and 30 samples in the spring in year 2017. Each season, 30 samples and a total of 120 samples of cooked kebabs offered in Khodabandeh city to the microbiological laboratory of the city health center Khodabandeh were transferred and examined for inflammation of Staphylococcus aureus and Escherichia coli.

**Results:** In the spring season,in 30 samples no contamination observed. In the summer, two cases of infection with staphylococcus aureus and one infection with Escherichia coli were observed. in the autumn one case of infection with staphylococcus aureus and one infection with Escherichia coli were observed.one contamination with staphylococcus aureus observed in the winter.

**Conclusion:** According to the findings, inflammation was higher in the summer than in the other season (6.66% staphylococcus aureus and 3.33% of Escherichia coli) From the point where it may have occurred in the preparation, cooking, storage, and supply phases, it is essential to observe health regulations when working with food, health education and personal hygiene, and monitoring at different stages of food preparation.

**Keywords:** Bacterial contamination , staphylococcus aureus, Escherichia coli, kubideh kebab, Khodabandeh city

# P513 - 670: ANTIMICROBIAL EFFECTS OF LACTOBACILLI LOCAL YOGURT ON IMPROTANT HUMAN PATHOGENS LIKE E.COLI AND STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Probiotic bacteria are microbial food supplements with beneficial properties on human health. The increase in the use of industrial dairy products instead of the traditional ones may enhance the possibility of missing the probiotic bacteria. The aim of this study was to isolate lactobacilli from local yogurts produced in rural areas of Sari and also to investigate their antibacterial effects against staphilococcus aureus and esherchia coli bacteria.

**Methods:** 12 samples from north, east, west and south of sari were collected and probiotic lactobacilli were isolated using MRS medium, selective screening methods, catalase test, producing NH3 from arginine and some relevant biochemical tests. Bacterial effects of the isolated probiotics against S.aureus and E.coli were investigated using disk diffusion and well diffusion agar methods.

**Results:** Out of 12 local yogurt samples, 94 colonies were selected which 31 of them producing lactic acid. 7 isolate were similar to L. Casei, L. rhamnosus, L. plantarum, L. acidophilus, L. Paracasei, L. delbrueckii, L. fermentum, aspect taxonomy. All of isolate showed antimicrobial properties in both disk diffusion and well diffusion agar methods

**Conclusion:** The results suggest that due to possess probiotic bacteria with antibacterial activity on human pathogen in yogurt which prepared traditional, can use of them in industrial dairy products.

**Keywords:** Probiotic, acid lactic bacteria, antimicrobial, pathogen

# P514 - 676: COXIELLA BURNETII IN MILKS IN THE IRAN; A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Q fever is a main zoonotic disease around the world. The aim of this meta-analysis was to estimate the prevalence of Coxiella burnetii in animal milk in Iran. We systematically reviewed the literature to identify eligible studies from January 2008 to June 2016 in English or Persian/Farsi databases.

**Methods:** We extracted the prevalence of C. burnetii in the milk of cows, goats, sheep's and camels in Iran. Meta-analysis was performed in Stata software.

**Results:** The total prevalence of C. burnetii in cow milks was 15.09% (95% CI: 11.08-19.10). Most and least prevalence of Q fever agent were seen in the East-Azerbaijan (25.55%) and Khorasan Razavi (4.22%) provinces, respectively. The pooled prevalence of C. burnetii in goat milks was 7.80% (95% CI: 3.54- 12.07 %). The provinces of Qom (0%) and Lorestan (44.71%) had the lowest and the highest frequency of C. burnetii infection in goat's milk, respectively. Total prevalence of C. burnetii in sheep milk was 3.79% (95% CI: 0.72- 6.87%). Highest frequency of C. burnetii in sheep milk was detected in the Khorasan-Razavi province (34.78%). Frequency of C. burnetii in camel milks was 1.4%.

**Conclusion:** High infection of C. burnetii in milks is an important health problem in Iran, amplified by the traditional preparations of dairy products. This highlights the importance of educating the public on consuming pasteurized milk and dairy products.

**Keywords:** Coxiella burnetii, Q fever, Animal, Iran, Milk, Diary

# P515 - 680: DETOXIFICATION METHODS FOR AFLATOXIN CONTAMINATION

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**Background and Aim:** Mycotoxins are fungal secondary metabolites commonly occurring in food witch pose a health risk to the consumer. Aflatoxins are a large group of mycotoxins that are produced mainly by Aspergillus flavus and Aspergillus parasiticus.The aim of this overview is explaining the ways to reduce aflatoxins levels of foods and finding a better one method.

**Methods:** Detoxification of Aflatoxin can be achieved by physical, chemical and biological methods. The main physical methods are: sorting, washing, de-hulling, heat treatment, irradiation, mycotoxin binders, sieving, flotation and density segregation. Chemical methods are commonly based on treatment by acids, oxidizing agents bases, reducing agents, food ingredients and medical plants and enzymatic detoxification. Biological decontamination: studies have reported a long list of microorganisms to detoxify mycotoxins , for example strains of lactobacillus and yeasts.

**Results:** We found that we can choose the method of detoxification based on food characteristics, chemical nature, level of contamination, the effect of method on food quality and food safety.

**Conclusion:** The use of the method must be easy and without any additional cost of food and do not have problems to storage and transport the products.

**Keywords:** Aflatoxin, detoxification, physical methods, chemical methods, biological methods

# P516 - 711: IMPROVEMENT OF FERMENTATION PERFORMANCE OF SACCHAROMYCES CEREVISIAE UNDER ANAEROBIC CONDITION USING ACCLIMATION AT HIGH TEMPERATURE

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**Background and Aim:** Saccharomyces cerevisiae encounters different stress conditions during anaerobic fermentation process which may cause cell death or decrease in cell viability. Many researches have been conducted about the effects of stressors on yeast cell especially under aerobic condition; however the effect of cell acclimation on tolerance of cells to stressors under anaerobic condition has not been studied vastly.

**Methods:** In the present study, the effects of different temperature were evaluated on fermentation and cell envelope integrity of acclimated and non-acclimated S. cerevisiae. In addition, the effect of acclimation at high temperature on fermentation of sucrose under anaerobic condition was evaluated.

**Results:** Based on the obtained results, S. cerevisiae can grow aerobically and ferment sucrose anaerobically to ethanol at 25-42°C. However, a long lag phase was observed when cells grown at low temperature (25-30°C) under aerobic condition were inoculated into high temperature (40°C) under anaerobic condition. Inoculation under the latter condition compromised cell envelope integrity in 72% of yeast cells. Interestingly, acclimation of cells to higher temperature (35°) under aerobic condition decreased the lag phase of fermentation. In addition, acclimated cells were able to start fermentation of sucrose immediately (in 30 min) at 40°C. Furthermore, using this method, just 12% of cells lost their cell envelope integrity.

**Conclusion:** Acclimation of S. cerevisiae under sub lethal conditions can increase the tolerance of cells to other stress conditions under anaerobic condition. This Strategy can be used to improve alcoholic fermentation at higher temperature.

**Keywords:** Alcoholic fermentation, Saccharomyces cerevisiae, cell envelope integrity

# P517 - 713: ASSESSMENT OF VIABILITY AND FATTY ACID COMPOSITION OF ACETOBACTER SENEGALENSIS DURING HIGH STRENGTH ACETOUS FERMENTATION

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**Background and Aim:** Production of high strength acetic acid has been already studied, and different techniques have been introduced for keeping cells viable and vital during acetous fermentation.

**Methods:** In this study, Acetobacter senegalensis LMG 23690 was used to produce acetic acid in repeated batch fermentation at 30±1°C. In addition, at different stages of fermentation, cell viability, vitality and total cellular fatty acid were analyzed to determine the sensitivity of cells to downstream process.

**Results:** Based on the obtained result, A. senegalensis can produce up to 125 g/L acetic acid at 30±1°C in each cycle of fermentation. Specific production rate increased progressively during repeated batch fermentation due to acclimation of cells to harsh condition of acetous fermentation. In addition, it was observed that in spite of being viable, almost all the cells (>95%) became non-culture on standard culture media when the concentration of acetic acid was higher than 60 g/L. By increasing of acetic acid concentration, cells also became very susceptible to downstream process such as cell harvesting or cell washing. According to GC analysis, palmitic acid (C16) and stearic acid (C18) were the most abundant cellular fatty acid. By increasing the acetic acid concentration, the cellular fatty acid profile changed and saturated fatty acid such as C14, C16, C18 and C20 were dominant indicating the phenotype adaptation during acetous fermentation.

**Conclusion:** A. senegalensis is an appropriate strain for production of vinegar by repeated batch fermentation at moderate temperature.

**Keywords:** Acetobacter senegalensis, acetous fermentation, cell viability

# P518 - 734: THE ROLE OF STAPHYLOCOCCUS AUREUS ENTEROTOXIN IN CAUSING FOOD POISONING

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**Background and Aim:** One of the most common causes of food poisoning known staphylococcus aureus in many countrie. the aim of this study is to review the role and importance of staphylococcus aureus enterotoxin in food poisoning , pathogenesis , laboratory methods for purification and detection of toxins in the food.

**Methods:** A systemic search was performed to identify studies published in pubmed and the cochrane database up to march 2015, and recently published obstracts were also reviewed. To review research articles on staphylococcusaureus enterotoxin role in causing food poisoning had been discusses.

**Results:** Sincestaphylococcus aureus in a range of temperature and PH grows , so may be present in a wide variety of food and grow. also food that has been contaminated with enterotoxin-producting strains , if they do not invest in good condition refrigeration , can staphylococcal enterotoxin source of outbreaks occur.

**Conclusion:** The presence of enterotoxin of staphylococcus aureus in food is considered as a risk factor for public health. hense it is recommended that personal hygiene when preparing food at all stages , redusing risk in the food chain will follow. as well as the need to cooperate epidemiologist , microbiologists, veterinary and sanitary food experts together to reduce staphylococcal food poisoning is causeed , a prerequisite for the realization of public health.

**Keywords:** Staphylococcus aureus, enterotoxin, food poisoning

# P519 - 777: DETECTION OF MYCOTOXIN PATULIN IN PRODUCED JUICES MOST OF FACTORY IN TEHRAN

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**Background and Aim:** Patulin is a mycotoxin that produced by several fungal genuses such as penicilium, aspergillus and bysoclamis that found on several fruits especially in apple and apple products.the present study was done to determine the level of patulin in fruit juice produced by Tehran factories.

**Methods:** In this study 40 sample of fruit juice concentrates(apple,pear,peach,grape) produced by four fruit juice concentrate factories,was bought from different shops in Tehran.patulin extraction was done by ethyle acetate and washing with 1.5% sodium bicarbonate and the amount of putolin assayed by HPLC method.

**Results:** Mean of patulin concentration in apple juice was 8.0857 and was more in NO.2 factory that was 30 mg/l .mean of patulin concentration in peach juice was 1.8250 and was more in NO.3 factory that was 19.5mg/l. patulin concentration in pear and grape juice was near by zero.

**Conclusion:** In this study the mean mycotoxin contamination levels in apple and peach juice was lower than word standard limit(50mg/l). In this study the mean mycotoxin contamination levels in apple and peach juice was lower than word standard limit(50mg/l).

**Keywords:** Patulin, HPLC, mycotoxin

# P520 - 803: THE HIGH PREVALENCE AND ANTIMICROBIAL RESISTANCE OF STAPHYLOCOCCUS AUREUS ISOLATES FROM UNPACKED ICE CREAMS

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**Background and Aim:** The aim of this study was to determine the prevalence and antibiotic resistance pattern of Staphylococcus aureus as one of the important foodborne pathogens from unpacked ice creams.

**Methods:** A total of 72 unpacked ice cream samples were randomly collected from different localities in East Azerbaijan province and transferred to the laboratory in a cool box and screened for the presence of S. aureus isolates. Biochemical test such as Gram stain, catalase and coagulase were applied for bacterial identification. Furthermore, antibiogram test was conducted according to Clinical and Laboratory Standards Institute protocol.

**Results:** From all screened samples, 30.5% of the ice creams were contaminated with S. aureus. Results of antimicrobial resistance analysis are as follows: penicillin (100%), erythromycin (87.5%), tetracycline (75%) and all isolated were susceptible to gentamicin (100%), rifampin (100%) and vancomycin (87.5%).

**Conclusion:** The relative high isolation and alarming antimicrobial resistance rates was detected in S. aureus isolates from unpacked ice creams underlines the necessity for applying strict standards at all processing steps by food control agencies and emphasizes the need for educational efforts to the personal involved in preparing the products to promote food hygiene. Moreover, this study demonstrated that unpacked ice creams should be considered a vehicle for the transmission of resistant pathogenic bacteria such as S. aureus and highlighted that negligence such as poor sanitation during the preparation and/or storage of these products and personal hygiene can be a potential factor in the spread of pathogenic bacteria and resistance genes in the community.

**Keywords:** Antimicrobial resistance, Staphylococcus aureus, unpacked ice creams

## P521 - 805: ANTIFUNGAL EFFECTS OF TEA TREE ESSENTIAL OIL

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**Background and Aim:** Essential oils are volatile compounds extracted from flowers, branches, stems, leaves, roots, fruits and other parts of plants and contain a mixture of alcohols, aldehydes, esters, ethers, ketones,phenol oxides together with saturated and unsaturated terpenes. The aim of this article is to review antifungal essential oils effects specially Tea Tree Essential Oil.

**Methods:** We reviewed 40 articles that had studied the effects of a very popular Tea tree essential oil ( Melaleuca Alternifolia) on Botyrytis Cinerea fungi with MIC and MFC methods.

**Results:** This volatile aromatic oil is very strong antifungal Thus,it effectively destroy several fungal pathogens.

**Conclusion:** We recommend this essential oil that can be used in medicine, food (as a preservative) and cosmetic products.

**Keywords:** Antifungal, essential oil, Tea tree essential oil

## P522 - 815: ZEARALENONE ON IMMUNE RESPONSE (CYTOKINES, TH1 AND TH2)

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**Background and Aim:** Mycotoxins are produced as a secondary metabolits by several species of fungi . Zearalenone (ZEN) or F-2 mycotoxin belongs to these toxic fungal metabolites and produced by numerous species of Fusarium spp.The aim of this article is to investigate the effects of zearalenone on immune system, cytokines secretion as well as Th1 and Th2.

**Methods:** Invivo researches are done on pigs specially female ones, because of significant similarities between human and pigs.

**Results:** Many fungal toxins suppress the immune function by inhibiting the proliferation of active lymphocytes and cytokines production as well as damaging the phagocytosis in macrophages. As a result, a severe allergic response has been seen in many cases.

**Conclusion:** Based on very hazardous effects of this toxin on human and animals and also loss of agricultural products, it needs more researches in this basis.

**Keywords:** Zearalenone, immune response, Cytokines, Th1, Th2

## P523 - 823: INVESTIGATE A PLANT PRODUCT AS AN ANTIFUNGAL AGENT

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**Background and Aim:** The present study was conducted to peruse the antifungal potential of aqueous crude extract of skin of Allium cepa. A. cepa has been used in folk medicine as antioxidant, anti-inflammatory, antipyretic, antiviral and antibacterial agent.

**Methods:** Macrobroth dilution method was accomplished to determine MIC value. Agar disk diffusion method was performed as screen test. Candida albicans (ATCC 2091) was chosen to survey. Serial dilutions were prepared from aqueous crude extract in 1, 0.5, 0.25, 0.125, 0.062 and 0.031 g/ml concentrations in distilled water. Distilled water was used as negative control.

**Results:** In this study, 0.062 and 0.25 g/ml concentrations were realized for MIC and MFC about this fungus, respectively. In agar disk diffusion method, in 1, 0.5, 0.25, 0.125, 0.062 and 0.031 g/ml concentrations, inhibitory zones were seen 24, 20, 19, 18, 17, and 13 mm in diameters for C. albicans, respectively.

**Conclusion:** The results of the present study support the traditional use of aqueous crude extract of A. cepa in the treatment of candidiasis infections. This study also provide an important basis for the use of this plant used to control infectious diseases caused by C. albicans.

**Keywords:** Allium cepa, Aqueous crude extract, Antifungal activity, Candida albicans

# P524 - 824: CHEMICAL AND MICROBIOLOGICAL QUALITY OF RAW CAMEL MILK PRODUCED IN SEMNAN

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**Background and Aim:** Camel milk is very important nutritious food item in some regions.The study was carried out to assess some of the chemical composition and microbial quality of raw camel milk produced in Semnan region.

**Methods:** Twenty-four raw camel milk samples were aseptically collected from the milking bowls over one month.

**Results:** Average results of physicochemical analysis were pH = 6. 5; titrable acidity = 1.58 % w/v, 2.84% w/v, fat; 1.82% w/v crude proteins; 1.96% w/v ash and 1.36% w/v chlorides as NaCl. . The microbial content revealed low levels with total aerobic flora ranging from 3.2 103 to 1.5 105 cfu mL1, micrococcus spp. and enterococcus spp. with average counts of 1.4 104 and 1.01 104 cfu mL1 , respectively. Yeasts and molds were found at averages levels of 6.2 104 and 4.3 103 cfu mL1, respectively. Lactic acid bacteria were also found in raw camel milk: 4.45 103 and 3.55 103 cfu mL1 as average for aerobic and anaerobic lactic acid bacteria, respectively. Staphylococcus aureus was detected, in 70% of raw camel samples.

**Conclusion:** The present study recommended further research on identification and molecular characterization on the isolates from milk of camel and its products.

**Keywords:** Camel milk, Chemical composition, Microbiological analysis, Lactic acid bacteria

# P525 - 830: MOLECULAR DETECTION OF METHICILLIN RESISTANT ENTEROTOXIN A PRODUCING STAPHYLOCOCCUS AUREUS IN PROFITEROLES IN KARAJ

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**Background and Aim:** Staphylococcal enterotoxins are members of a family of more than 20 different staphylococcal and streptococcal exotoxins that are functionally related and share corresponding gene sequence homology. These bacterial proteins are known to be mitogen and are responsible for significant human diseases that include food poisoning. The aim of this study was to detect the enterotoxin A producing Staphylococcus aureus in profiteroles.

**Methods:** Sampling was carried out 1 time from 50 confectionaries in Karaj. Serial dilutions from each sample were prepared. Samples were cultured on Baird parker agar. After 48 hours incubation at 37ºC, black colonies were selected. Following transfer to blood agar, susceptibility of isolates to oxacillin was determined using disc diffusion method, Presence of nuc, mecA and sea genes was checked using PCR.

**Results:** In total, based on culture results 8 out of 50 samples (16%) had Staphylococcus aureus contamination. PCR method results showed the presence of nuc gene in 14 (28%) of the samples, mecA gene and sea gene in 5 (10%), 3 (6%) of the samples respectively.

**Conclusion:** High frequency of enterotoxin A producing MRSA isolates in different foods and specially profiteroles as an enrichment medium for growth and toxin production of bacteria, is a warning for public health.

**Keywords:** MRSA, enterotoxin, profilteroles

## P526 - 832: INTRODUCING AN ANTIMICROBIAL PRODUCT

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**Background and Aim:** Lemon is a native fruit in Iran, which the fruit has been used as an anti-inflammatory, antioxidant, antibacterial, antiparasitic and antiviral agent. In this study, authors describe activities of aqueous extract of Lemon seeds against Candida albicans (ATCC 2091).

**Methods:** Macrobroth dilution method was accomplished to assess MIC value. Agar disk diffusion method was performed as screen test. C. albicans was chosen to survey. Serial dilutions were prepared from aqueous extract in 1, 0.5, 0.25, 0.125, 0.062 and 0.031 g/ml concentrations in distilled water. Distilled water was used as negative control.

**Results:** In this study, 0.062 and 0.25 g/ml concentrations were realized for MIC and MFC about the fungus, respectively. In agar disk diffusion method, in 1, 0.5, 0.25, 0.125, 0.062 and 0.031 g/ml concentrations, inhibitory zones were seen 20, 15, 14, 14, 13, and 13 mm in diameters for C. albicans, respectively.

**Conclusion:** The results of new study support the use of aqueous extract of Lemon seeds in the treatment of candidiasis infections. Thus, Lemon seeds can be applied as therapeutic supplement in the developing countries.

**Keywords:** Lemon seeds, Aqueous extract, Antifungal activities, Macrobroth dilution method, Agar disk diffusion method, Candida albicans.

# P527 - 841: IDENTIFICATION OF ESCHERICHIA COLI IN SAMPLES OF MEAT, DAIRY AND VEGETABLE BY PCR

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**Background and Aim:** Diarrheal diseases are a major health problem worldwide, especially in developing countries are considered. One of the most important agents of diarrhea are Escherichia coli which responsible for many deaths of infants. Aim: The aim of this study was to identify pathotypes of Escherichia coli, isolated from of meat, dairy and vegetables using PCR.

**Methods:** For this purpose, 40, meat products, milk and salad sampled and sent to the laboratory for food control selected and confirmed by Imvic test and their pathogenicity with PCR were studied.

**Results:** According to the results, 35% of clinical specimens, 17.5% of meat, 2.5% of milk samples and 17.5% of salad and vegetables were identified as vector of pathogenic E. coli. So, E.coli could be introduced as a common agent of infant diarrhea in our country.

**Conclusion:** Thus, food hygiene and food control necessity demands for the control of presence of pathogenic E. coli.

**Keywords:** Escherichia coli, pathotypes, meat, dairy, vegetables

# P528 - 844: IDENTIFICATION OF ENTROCOCCUS FAECALIS ISOLATED FROM DAIRY PRODUCTS IN QOM CITY

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**Background and Aim:** Bacteriocins are proteins produced by bacteria especially Acid lactic bacteria having antimicrobial characteristics and used for food preservation. In recent years, especial considerations have been taken to detection of acid lactic bacteria and Bacteriocins in food industries to use them as food preservatives.

**Methods:** In this study, 50 samples of different dairy products were examined to investigate genes of Entrain A, Enterocin P and. After separation and detection of bacteria in presence of special primers related to Enterocin genes, their frequencies were studied.

**Results:** Among 50 samples, 5 (10%) were contaminated to Enterococcusfaecalis. The gene related to EnterocinA in 9 isolates (4/5%), the gene related to Enterocin P in 15 isolates (14%), the simultaneous presence of the gene related to EnterocinA and P in 2 isolates (4/54%), the gene related to Enterocins A and As-48 in 7 isolates (15/09%).

**Conclusion:** According to the presence of a lot of Enterocingenes in Enterococcus faecalis separated from dairy products, doing research on antimicrobial characteristics of Enterocins produced by this bacterium is of great necessity.

**Keywords:** Dairy products, Enterococcus faecalis, Enterocin genes

# P529 - 848: DETERMINE THE PREVALENCE, ANTIBIOTIC RESISTANCE, METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) AND METHICILLIN-RESISTANT COAGULASE-POSITIVE STAPHYLOCOCCI (MR-COPS) AMONG STAPHYLOCOCCUS AUREUS ISOLATED FROM READY-TO-EAT FOODS

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**Background and Aim:** Staphylococcus aureus is a recognized major cause of foodborne illnesses, and methicillin-resistant Staphylococcus aureus (MRSA) is a worldwide health concern. The purpose of this study was to determine the prevalence, antibiotic resistance, methicillin-resistant S. aureus (MRSA) and methicillin-resistant coagulase-positive staphylococci (MR-CoPS) isolated from ready-to-eat foods.

**Methods:** A total of 226 fresh fast-foods were collected randomly from different fast-food stores in Mashhad. After isolation and purification of Staphylococcus aureus isolates from 80 (35.4%, 80/226) samples. For the MRSA and MR-CoPS, 52 isolates were obtained from 80 samples (65%, 52/80).The strains were characterized by detecting the mecA and femA and 16 Sr DNA genes and studying their resistance properties against several antibiotics.

**Results:** Of the 55 analyzed S. aureus strains 40 (73%) isolates were mecA positive and 55 (100%) samples contain femA and 16 Sr DNA genes. These genes derived from six different samples; twelve isolates were from sausages, twelve from kielbasa, eleven from the chicken sandwich and nine from Falafel. Eight strains isolated from hamburgers, and three from feed liver.

**Conclusion:** Our results showed that kielbasa is a likely vehicle for the transmission of multidrug-resistant and toxigenic staphylococci. In addition, the greatest resistance was to nalidixic acid (90%) and the least resistance was to imipenem (3%).It seems that fast food consumption survey using multiplex PCR is a sensitive and useful method to detect antibiotic resistance genes of Staphylococcus aureus.

**Keywords:** MRSA, ready-to-eat food, staphylococci, antimicrobial resistance

# P530 - 849: EVALUATION OF MICROBIAL TOTAL COUNT AND PH IN MILK PRODUCTION IN INDUSTRIAL FARMS IN SOUTH KHORASAN PROVINCE

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**Background and Aim:** Milk is a food that inherently favours microbial growth and due to its characteristics several precautions must be taken to prevent contamination. Milk germs have an undesirable effect on the taste and physical properties of milk. Even though, raw milk is sterile at secretion, contamination of milk by microorganisms can take place during milk handling, storage and other pre-processing activities.

**Methods:** In this study, were sampled three times and each time hundred samples from eleven districts of South Khorasan province Samples were collected in sterile McCarthy glasses and sent to the reference laboratory immediately in the vicinity of the ice.

**Results:** Then, different dilutions of raw milk samples were prepared and cultured on a Plate Count Agar medium for total microbial counting. The results of this study showed that the total microbial load in the milk machine stage and the reservoir of the collection center was significantly higher than the previous stages.

**Conclusion:** On the other hand, the total count of raw milk and PH in summer increased significantly compared with winter. Education and hygiene have a significant role in reducing the microbial total count of milk.

**Keywords:** Milk, microbial total count, pH

# P531 - 861: ISOLATION AND IDENTIFICATION OF LACTIC ACID BACTERIA FROM TRADITIONAL SOURDOUGH OF KHUZESTAN PROVINCE

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**Background and Aim:** Lactic Acid Bacteria are probably abundant bacteria associated with human beings, which normally are associated with the digestive system and are also are present in habitats associated with food, including cereals. The aim of this study is to isolate and identify different species of lactic acid bacteria in traditional sourdough in Khuzestan Province, and introduce them to the industry as probiotics.

**Methods:** After characterization of isolated bacteria, their probiotic properties were evaluated, such as resistance to acid, resistance to bile salts, Resistance to gastric juice enzymes such as pepsin and trypsin, the ability to produce antibacterial compounds, gas production and Exopolysaccharide production, then, the safety assessment of selected isolates was performed according to national standards and ultimately molecular detection was performed using 16S rDNA sequencing method.

**Results:** The results showed that 3 strains were selected with codes B0302, B0303, C0401, which have no pathologic activity, they had the characteristics of resistance to acid over 106 cfu / ml and resistance to bile salts with deterrence factor less than 0.4, respectively, the characteristics of anti-bacterial compounds production against Escherichia coli and Staphylococcus aureus bacteria, the ability of resistance to gastric juice enzymes and A0402 had the ability to produce gas.

**Conclusion:** According to 16S rDNA sequencing, it was found that A0501 and A0302 strains had the highest affinity or Pediococcus lolii and A0402 strain had the closest with Lactobacillus fermentum which could improve the quality and quantity of sourdough and subsequently breads were produced with better quality.

**Keywords:** Lactic acid bacteria, Probiotic, Khuzestan sourdough, 16S rDNA

# P532 - 869: EFFECT SATUREJA EDMONDI ESSENTIAL OIL ON THE GROWTH OF STAPHYLOCOCCUS AUREUS IN A FOOD MODEL

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**Background and Aim:** Given the negative effects of chemical preservatives, recently there has been an increasing tendency to identify and utilize plants with preservative and antimicrobial properties. This study aimed to investigate the antimicrobial effects of Satureja edmondi on the growth form of Staphylococcus aureus in a food model.

**Methods:** The plant was collected from the Bistoonh Mountains in Kermanshah. First, its essential oil was extracted by Clevenger apparatus. After the extraction of essential oil, the chemical compounds were characterized by GC/MS. Sensory acceptability and the effects of different concentrations of essential oil (0.01%, 0.02%, and 0.04%) on the growth of S.aureus inoculated in commercially-prepared barley soup were investigated at 8 °C and 25 °C for 21 days. Data analysis was performed using SPSS software.

**Results:** The major chemical compounds of essential oil of S.edmondi were M-Thymol (39.64%), Gamma Terpinene (25.12%), p-Cymene (15.61%), and Alpha Terpinene (4.2%). At 25 °C, all concentrations of the essential oil significantly reduced the number of the bacteria as compared with the control and with the treatments of at 8 °C. With increasing concentrations, the log reduction became more significant and the effect of the essential oil was stronger. The barley soup sample containing essential oil with a concentration of 0.01% had the highest level of sensory acceptability.

**Conclusion:** S.edmondi essential oil can be used to inhibit the growth of S.aureus in food products.

**Keywords:** Satureja edmondi, Staphylococcus aureus, food model

# P533 - 888: PREVALENCE OF STAPHYLOCOCCUS AUREUS IN CREAM FILLED PASTRIES DISTRIBUTED IN CONFECTIONARIES OF TABRIZ, IRAN

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**Background and Aim:** Staphylococcus aureus is recognized as a food born pathogen which is widely distributed in nature. In humans, this bacterium is present in the anterior part of the nose of adults. Therefore, individuals who are involved in food preparation, processing or distribution are capable to transfer the bacteria to food in case of non-compliance with sanitary procedures. This bacterium may cause food poisoning in humans as a result of growing in food and producing enterotoxin. Cream filled pastries, as a source of nutrients, may spoil when prepared and stored in improper conditions. Regarding to high consumption of this product and probability of its contamination, this study was conducted to determine the prevalence of Staphylococcus aureus in cream filled pastries distributed in Tabriz confectionaries, Iran.

**Methods:** For this purpose, forty samples of Cream filled pastries were randomly selected from Tabriz confectionaries during March to May 2017. Samples were transferred to the Laboratory of food hygiene under a sterile condition in order to isolate, identify and enumerate of Staphylococcus aureus according to the national standard method of Iran.

**Results:** According to the results obtained from 40 cream filled pastries, 9 (22.5%) samples were contaminated with Staphylococcus aureus and the mean rate of contamination was 4.3 log10/ml.

**Conclusion:** Regarding to the findings of this research, the contamination rate of cream filled pastries with Staphylococcus aureus was relatively significant. Therefore, it is necessary to observe personal and environmental hygienic procedures during preparation and distribution of this product.

**Keywords:** Staphylococcus aureus, Cream filled pastries, Confectionary, Pathogen

# P534 - 891: PREVALENCE OF BACILLUS CEREUS IN CREAM FILLED PASTRIES DISTRIBUTED IN CONFECTIONARIES IN TABRIZ, IRAN

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**Background and Aim:** Bacillus cereus is a gram-positive, spore-forming and facultative-anaerobic bacterium, which is widely distributed in nature. It has been recognized as one of the major food borne pathogens that may contaminate the cream filled pastries. It also causes two different types of food poisoning: the diarrheal type and the emetic type. Cream filled pastry, because of its production from dairy products and eggs is known as a good carrier for this organism. It also can be spoiled when prepared and stored under inappropriate conditions. Regarding to high consumption of this product and probability of its contamination, this study was aimed to investigate the prevalence of Bacillus cereus in the cream filled pastries distributed in Tabriz's confectioneries.

**Methods:** For this purpose, forty samples of cream filled pastries were randomly selected from Tabriz confectionaries during March to May 2017. They were transferred to the Laboratory of Food hygiene under sterile conditions in order to isolate, identify and enumerate Bacillus cereus according to the national standard method of Iran.

**Results:** According to the results obtained from 40 cream filled pastries, 6 (15%) samples were contaminated with Bacillus cereus and the mean rate of contamination was 3.3 log10/ml.

**Conclusion:** Regarding to the findings of this research, the contamination rate of cream filled pastries with Bacillus cereus was relatively significant. Therefore, it is necessary to observe personal and environmental hygienic procedures during preparation and distribution of this product.

**Keywords:** Bacillus cereus, Cream filled pastries, Confectionary, Pathogen

# P535 - 892: CONTAMINATION OF LACTUCA SATIVA BUSHES IN FOOD PRODUCTS

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**Background and Aim:** Vegetables and fruits play an important role in the daily diet. Among these nutrition subjects Lettuce is known as one of the most widely used vegetables in food collection. According to high consumption of Lettuce between various global societies and also in IRAN and the existence of mesophilic aerobic bacteria which include broad-spectrum bacteria that can live and grow in various temperatures and conditions with potential ability for causing human disease. This research was conducted during 6 month by collecting Lettuces from Tehran's restaurants for detection and evaluating the bacteria ratio.

**Methods:** The sampling procedure was performed under license of the Iranian ministry of health and medical education by using recommended methods, training and laboratory equipment such as cold box, flame, sterile loop and disposable plates.Sample in sterile plates from selected restaurants were transferred to laboratory with cold box corresponding to FAO standards (1979) under aseptic conditions and instantly analyzed for bacterial colony counting,serial dilutions were prepared with phosphate buffered saline.

**Results:** During the period of the study only 25 cases of Lettuce contamination with mesophilic aerobic bacteria among all gathered samples from Tehran restaurants were determined. These 25 cases were belonged to slice Lettuces which were used in salad with 107 to 108 CFU that means the pollution ratio is high.

**Conclusion:** In relation to results of research the reason of this fact has been referred to lack of individual health care of restaurant staffs and lack of proper washing of Lettuces. However educational teaching by health experts can be useful for resolving these failures.

**Keywords:** Lactuca sativa, mesophilic aerobic bacteria, fecal contamination

# P536 - 913: THE CONTAMINATION OF CAPSICUMS IN THE NUMBER OF RESTAURANTS IN TEHRAN

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**Background and Aim:** Vegetables and fruits play an important role in the daily diet.Among these nutrition subjects Capsicums is known as one of the widely used vegetables in food collection.According to high consumption of Capsicums between various global societies and also in IRAN and the existence of bacteria which include a broad-spectrum bacteria that can live and grow in various temperatures and conditions with potential ability for causing human disease.This research was conducted during 6 month by collecting Capsicums from Tehran's numerous restaurants for detection and also evaluating the mesophilic aerobic bacteria ratio.

**Methods:** The sampling procedure was performed under license of the Iranian ministry of health and medical education by using recommended methods, training and laboratory equipment such as cold box, flame, sterile loop and disposable plates.sample in sterile plates from selected restaurants were transferred to laboratory with cold box corresponding to FAO standards(1979) under aseptic conditions and instantly analyzed. For bacterial colony counting, serial dilutions were prepared with phosphate buffered saline.

**Results:** During the period of the study only 13 cases of Capsicums contamination with mesophilic aerobic bacteria among all gathered samples from Tehran restaurants were determined. These 13 cases were belonged to Capsicums which were served with foods with 107 to 108 CFU that means the pollution ratio is high.

**Conclusion:** Insufficient health care,hygiene and fecal contamination can cause numerous infections in human which can be prevented by proper washing of Capsicums and using WHO approved training.

**Keywords:** Capsicums, mesophilic aerobic bacteria, hygiene

# P537 - 915: EVALUATION OF MICROBIAL LOAD OF MILK PRODUCTION IN DAIRY FARMS AND MILK COLLECTION CENTERS IN KHOSF DISTRICT, SOUTH KHORASAN PROVINCE

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5. Dvm

**Background and Aim:** Milk is synthesized by cells within the mammary gland and is virtually sterile when secreted into the alveoli of the udder. Beyond this stage of milk production, bacterial contamination can generally occur. Cow health, environment, milking procedures and equipment sanitation can influence the level of microbial contamination of raw milk. All these factors will influence the total bacteria count (SPC) and the types of bacteria present in raw bulk tank milk.

**Methods:** For this purpose, 5 semi-industrial livestock and 2 milk collection centers in Khosf city were selected randomly. in each farm five dairy cow were selected randomly, and in the milk collection centers, Six sampling times performd from stage of drainage and reservoir tank the winter of 95.

**Results:** The results of this study indicate that the removal of the first parts of the milk in the milk outlet channel has a clear effect on reducing the microbial quality of raw milk, but increasing the amount of microbial burden in the mixing step of the raw milk in the reservoir tank is higher.

**Conclusion:** On the other hand, the results of this study indicate that the quality of the milk products in livestock farms is not desirable, and this affects the shelf-life of the raw milk and its products. It is recommended that training and guidance be given to runchers to improve the quality of raw milk products.

**Keywords:** Milk, total bactria count, contamination

# P538 - 933: ISOLATION AND MOLECULAR IDENTIFICATION OF CAROTENOID-PRODUCING BACTERIA

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**Background and Aim:** The production of pigment from bacteria is very important due to low cost of production, more product and easy to extract rather than other sources. Carotenoids are widely used in food additives and antioxidants, in addition to being used vitamin A precursors, to increase antibody production in vitro, anti-tumor agents, and to prevent cardiovascular disease. The aim of the present study was to isolate and molecular identify carotenoid-producing bacteria from different regions of Tehran.

**Methods:** Twenty soil samples were collected from different regions of Tehran. After serial dilution, each sample was cultured on BHI agar medium and incubated at 37°C. Pigment producing bacteria were selected for further identification and their pigment extraction was done by methanol. The screening is carried out at two levels: i) selection of strains by visual color inspection, ii) the analysis of the pigment extracts by UV-VIS spectroscopy and confirmation by high-performance liquid chromatography (HPLC). The isolates were identified by phenotypic methods and their 16S rRNA gene was amplified by the PCR method for genotypic identification.

**Results:** Staphylococcus epidermidis, Micrococcus aloeverae, Citricoccus alkalitolerans, Rhodococcus zopfii, Arthrobacter agilis, Dietzia natronolimnaea and Rhodococcus ruber were identified as carotenoids producing strains. The highest rate of absorption was observed using UV-VIS analysis in Staphylococcus epidermidis and Dietzia natronolimnaea. HPLC analysis showed that the produced carotenoids are beta-carotene in comparison with the standard ?-carotene curve.

**Conclusion:** Microorganisms are the potential source in the production of colorants. In our study, we introduced two genera of bacteria (Staphylococcus epidermidis and Dietzia natronolimnaea) in effective production of carotenoid.

**Keywords:** β-carotene, Carotenoids, HPLC, Pigment, UV-VIS

# P539 - 953: ISOLATION AND IDENTIFICATION OF SALMONELLA ENTERICA SEROVARS, TYPHI, TYPHIMURIUM, AND ENTERITIDIS FROM RAW MILK AND DAIRY PRODUCTS

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**Background and Aim:** Milk and dairy products provide a rich medium of nutrients for growth of microorganisms such as Salmonella. So, providing the high quality of these products are necessary for community health. Salmonella is one of the important foodborne pathogens which found in most farms and animal species. It can lead to typhoid, enterocolitis, septicemia and death. The purpose of the present study was to determine the contamination rate of raw milk and dairy products to Salmonella Typhi, S. Typhimurium and S. Enteritidis. It is very important in food safety risk assessment and human health.

**Methods:** A total of 441 samples including raw milk and dairy products were obtained from different region of South Khorasan, Iran. After taking the samples, they were kept at 4 °C and transferred to laboratory, immediately. Isolation of bacteria was made by culture and enrichment based-PCR methods.

**Results:** Among the 441 tested samples only 4 samples were contaminated with Salmonella spp. in culture method. PCR assay, didn't find any positive sample regarding Salmonella spp. In chi square test, difference of two methods of isolation was significant ($P< 0.05$).

**Conclusion:** In conclusion, the results of present study showed a good hygienic state in dairy farms and markets. Also, absence of Salmonella in raw milk shows the good health state of animals in this region.

**Keywords:** Salmonella, Milk, dairy products

## P540 - 967: PRESENTING AN ANTIBACTERIAL PRODUCT

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**Background and Aim:** Verbascum thapsus is a native plant in Iran, which the plant has been used as an anti-inflammatory, tonic, indigestion, antiviral, and antipyretic agent in Iran. The goal of the new study was introducing an antibacterial product (aqueous extract of V. thapsus) against common pathogen (Escherichia coli O157:H7) with broth macro-dilution and agar well diffusion methods.

**Methods:** Agar well diffusion method was performed as screen test. Macro-broth dilution method was accomplished to determination of MIC value. E. coli was chosen to survey. Serial dilutions were prepared from aqueous extract in 1/12 (0.083 g/ml), 1/24 (0.041 g/ml), 1/48 (0.02 g/ml), 1/96 (0.01 g/ml), 1/192 (0.005 g/ml), and 1/384 (0.002 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar well diffusion method, in 1/12, 1/24, 1/48, 1/96, 1/192, and 1/384 dilutions, inhibitory zones were seen 14, 13, 12, 11, 9 and 8 mm in diameters for E. coli. In the examined bacterium, MIC and MBC values were the same and equal to 0.02 g/ml concentration.

**Conclusion:** Our data represent that aqueous extract of V. thapsus have great potential as an antibacterial product against E. coli. So, V. thapsus can be used in the treatment of infectious diseases caused by resistant microbes.

**Keywords:** Verbascum thapsus, Aqueous extract, Antibacterial product

# P541 - 981: DETERMINATION THE AMOUNT OF CONTAMINATION BRANNY WHEAT FLOUR SANGAK BAKERIES OF QOM TO AFLATOXIN B1 BY ELISA

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**Background and Aim:** Mycotoxins are small molecules produced by filamentous fungi, they are secondary metabolites of fungi, aflatoxins are the most notable, these toxins have a biological originate and have antigenic properties, and is able to create acute and chronic Aflatoxicosis. In general, their production is influenced by various factors such as the genetic characteristics of the productive fungi and the physico-chemical environment in which they grow. Aspergillus flavus is one of the most common Aflatoxin producing fungi in wheat and flour,given that the Sangak bread is one of the most important breads consumed of people in the city of Qom, the purpose of this study was to determination of the level of contamination of aflatoxinB1 in Sangak bakeries flour in this city.

**Methods:** In this study in summer 23 samples of wheat flour were randomly selected from 23 bakeries and their amount of AflatoxinB1 was measured, using competitive ELISA method and data were analyzed, using SPSS, curve, Excel software.

**Results:** 23 samples of wheat flour were contaminated with AflatoxinB1, Of these number 18 samples (%78.3) with contamination more than standard of Iran and 23 samples (%100) with contamination more than standard of European Union, the average concentration of this Aflatoxin was determined as 6.9 µg / kg with standard deviation of 2.4.

**Conclusion:**The average contamination in flours was more than The acceptable, Which seriously damages human health, Therefore, the need to continuously control and evaluation the level of AflatoxinB1 in flour in bakeries is seems necessary.

**Keywords:** AflatoxinB1, Wheat Flour, Sangak bread, ELISA

# P542 - 990: DETECTION OF (SEA ) GENES IN AMONG METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS(MRSA )ISOLATED FROM CLINICAL SAMPLES IN ESFAHAN,IRAN

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**Background and Aim:** The growing frequency of methicillin resistant Staphylococcus aureus (MRSA) as a cause of infections both in the hospital and the community led to increased use of the glycopeptide antibiotic such as vancomycin over the past three decades. enterotoxin is very serious virolance factor in staphylococcus aureus The aim of this Study is Prevalence of (sea) enterotoxin gene in MRSA isolated from clinical samples in Isfahan.

**Methods:** During one year period 100 isolates of Staphylococcus aureus were collected. After identification and purification, using agar screening to confirmed MRSA isolates. DNA of the isolates was extracted by DNA extraction kit (Fermentas) according to the manufacturer's protocol. Amplification of sea genes was done by specific primer and polymerase chain reaction method.

**Results:** From 100 isolates of Staphylococcus aureus 65 %( 65strain) were of MRSA. Prevalence of the enterotoxin type g gene were 53.84 (35strain) in MRSA strains.

**Conclusion:** In study expression levels of MRSA and Sea genes was high. it is suggested that MRSA infections are associated with increased mortality . It is necessary use of molecular techniq as a regular screening program in hospitals to avoid spread of MRSA and agents cause food poisoning.

**Keywords:** Clinical sample, PCR sea genes, Methicillin-Resistant Staphylococcus aureus (MRSA)

# P543 - 1027: EVALUATION OF PSEUDOMONAS AERUGINOSA CONTAMINATION IN BOTTLED WATER SAMPLES IN THE CITY OF MASHHAD

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**Background and Aim:** The microbiological quality of drinking water is of great concern to mankind especially contamination of Pseudomonas aeruginosa. Pesudomonas aeruginosa is food- and water-borne opportunistic pathogen, constitutes a health risk mostly to immunocompromised patients, and also affects the taste, odor and turbidity of water.

**Methods:** In order to detect P. aeruginosa in bottled water, 68 mineral and drinking bottled water samples of 8 brands were collected from production plant & retail market in Mashhad during 2015-2016. P. aeruginosa was detected by the membrane filtration technique (MFC), using Cetrimide agar. The isolates were subjected to confirmatory tests, based on ISO 16266:2006 and ISIRI#8869 methods include: growth at 42°C, fluorescent production by UV radition,oxidase & Acetamide test and additional confirmation by MICROGEN ID (panel A&B) followed by final confirmation: PCR with gyrB primer .

**Results:** Presumptive isolates of P. aeruginosa were observed on cetrimide agar in 24 (35.2%) of samples. Among these isolates, 16 Sample's(66.6%) confirmed as P. aeruginosa . 11 samples isolates were identified as P. aeruginosa by the MICROGEN ID and finally six samples(8.8%) of which were further confirmed by PCR.

**Conclusion:** The presence of P. aeruginosa in bottled water with contamination rates of 8.8% this study raises health concerns since P. aeruginosa is an indicator of inferior water quality. Therefore, more strict regulations and regular monitoring of water production plants are recommended in order to supply safe and acceptable bottled drinking water in the market.

**Keywords:** Pseudomonas aeruginosa,Water, Contamination

# P544 - 1044: A SURVEY OF PROTEOLYTIC ACTIVITIES OF LACTIC ACID BACTERIA ISOLATED FROM IRANIAN DAIRY PRODUCTS

Tannaz Mirhadizadi[1]

1. -

**Background and Aim:** The proteolytic systems of LAB involved in casein processing provide cells with essential amino acids. They are of industrial importance due to the contribution of generated peptides to the development of the sensorial prop. of fermented dairy products .Moreover, proteolysis is often followed by a reduction of the number of allergic epitopes. Consequently, this decreases allergenicity of hydrolyzed proteins.

**Methods:** 27samples were obtained .Isolates were initially Gram-stained, catalase production,Cells morphology. Genotypic iden. was used.The purified strains were grown in suitable media and tested for proteolytic activity on UHT skim milk and Milk-citrate agar . Analysis of casein hydrolysis by using SDS-PAGE and RP-HPLC. The influence of pH and temerature conditions on proteinase activity were tested.

**Results:** 170 isolates of LAB were isolated. isolates tested, 7 showed a high proteolytic activities .1 strain was identified as Lactobacillus fermentum, 4 strains Enterococcus faecium and 2 strains Enterococcus faecalis.All were able to hydrolyze to different extent αs1-, αs2- and β-caseins.Enterococcus faecium proteases showed highest hydrolytic activities against aS1-casein. Lactobacillus fermentum and Enterococcus faecalis showed highest hydrolytic activities against β-casein, Moreover, Lactobacillus fermentum and Enterococcus faecalis hydrolyzed denaturated whey (BLG). Optimal pH of hydrolysis for all strains was between 6.5 and, whereas optimal tem varied from 37 to 42°C.

**Conclusion:** The results revealed the presence of a wide variety of LAB and a high enterococcis was detected. The strain tested showed a relatively highly proteolytic activity for casein and limited for lactoserum.

**Keywords:** Lactic acid bacteria, proteolytic activity, iranian dairy, molecular biology

## P545 - 1050: NOMINATING AN ANTIBACTERIAL SUPPLEMENT

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**Background and Aim:** Solanum lycopersicum (SL) is a native fruit in Iran, which the fruit has been used as a tonic, indigestion, antipyretic, anti-inflammatory, antiviral and antifungal agent in Iran. The end of the new study was introducing an antibacterial supplement (SL seed oil) against Pseudomonas aeruginosa (PA) with broth macro-dilution and agar disk diffusion methods.

**Methods:** Agar disk diffusion method was performed as screen test. Macrobroth dilution method was accomplished to determination of MIC value. PA was chosen to survey. Serial dilutions were prepared from oil in 1 (1 g/ml), 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8 (0.125 g/ml), 1/16 (0.062 g/ml), 1/32 (0.031 g/ml) and 1/64 (0.015 g/ml) ratios in DMSO. DMSO and Cefixime was used as negative and positive controls, respectively.

**Results:** In agar disk diffusion method, in positive control and 1, 1/2, 1/4, 1/8, 1/16 and 1/32 dilutions, inhibitory zones were seen 24, 16, 14, 11, 10, 9 and 8 mm in diameters for PA. In the examined bacterium, MIC and MBC values were 1/8 and 1/2, respectively.

**Conclusion:** Our data indicate that oil of SL seed have great potential as an antibacterial supplement against PA. So, SL seed oil can be used in prevention and treatment of infectious diseases caused by resistant microbes.

**Keywords:** Solanum lycopersicum, Seed, Oil, Antibacterial supplement

# P546 - 1053: IN VITRO ASSESSMENT OF ANTIBACTERIAL ACTIVITIES OF AQUEOUS EXTRACT OF SPINACIA OLERACEA AGAINST PSEUDOMONAS AERUGINOSA.

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**Background and Aim:** Pseudomonas aeruginosa is a fast growing bacterium that lead to microbial infections in humans and animal. On the other hand, medicinal plants are considered new resources for producing components that could treat microbial infections. The goal of the new study was to assess antibacterial activities of aqueous extract of Spinacia oleracea against P. aeruginosa with macro-broth dilution and agar well diffusion methods.

**Methods:** Agar well diffusion method was performed as screen test. Macro-broth dilution method was accomplished to determination of MIC value. P. aeruginosa (PTCC 1707) was chosen to survey. Serial dilutions were prepared from aqueous extract in 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8(0.125 g/ml), 1/16 (0.062 g/ml), 1/32 (0.031 g/ml), 1/64 (0.015 g/ml) and 1/128 (0.007 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar well diffusion method, in 1/2, 1/4, 1/8, 1/16, 1/32 and 1/64 dilutions, inhibitory zones were seen 14, 13, 12, 10, 9, and 8 mm in diameters for P. aeruginosa. 1/32 and 1/4 dilution were realized for MIC and MBC about this bacterium, respectively.

**Conclusion:** Based on the results, aqueous extract of S. oleracea has a fair antibacterial activities on tested bacterium. Thus, S. oleracea can be used in the prevention and treatment of bacterial infections. Additional in vivo researches and clinical trials would be needed to justify.

**Keywords:** Spinacia oleracea, Aqueous extract, Antibacterial activity

# P547 - 1066: EVALUATION OF ANTIBACTERIAL PROPERTIES OF ASHRESI DATE PALM HYDRO-ALCOHOLIC EXTRACT.

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**Background and Aim:** The recent study was conducted to peruse the antibacterial properties of Ashresi date palm (ADP) hydro-alcoholic extract. ADP has been used in traditional medicine as antipyretic, anti-inflammatory, antioxidant, antiviral and antifungal agent.

**Methods:** Macro-broth dilution method was accomplished to determine MIC amount. Agar disk diffusion method was performed as screen test. Escherichia coli O157:H7 (ATCC 25922 (EC)) was chosen to survey. Serial dilutions were prepared from hydro-alcoholic extract in 0.5, 0.25, 0.125, 0.062, 0.031 and 0.015 g/ml concentrations in distilled water. Distilled water and Cefixime was used as negative and positive controls, respectively.

**Results:** In this study, 0.062 and 0.125 g/ml concentrations were realized for MIC and MBC about this bacterium, respectively. In agar disk diffusion method, in positive control and 0.5, 0.25, 0.125 and 0.062 g/ml concentrations, inhibitory zones were seen 33, 11, 9, 8 and 8 mm in diameters for EC, respectively.

**Conclusion:** The results of the new study support the traditional use of this extract in the treatment of bacterial infections caused by EC.

**Keywords:** Ashresi date palm, Hydro-alcoholic extract, Antibacterial property

# P548 - 1067: IN VITRO STUDY ON ANTIBACTERIAL ACTIVITIES OF A MEDICINAL PLANT

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**Background and Aim:** Medicinal plants are considered new resources for producing components that could treat bacterial infections. The goal of the present study was to assess antibacterial activities of Ashresi date palm (ADP) hydro-alcoholic extract against Bacillus subtilis (BS) with macro-broth dilution and agar well diffusion methods.

**Methods:** Agar well diffusion method was performed as screen test. Macro-broth dilution method was accomplished to determination of MIC value. BS (ATCC 21332) was chosen to survey. Serial dilutions were prepared from hydro-alcoholic extract in 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8(0.125 g/ml), 1/16 (0.062 g/ml), 1/32 (0.031 g/ml) and 1/64 (0.015 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar well diffusion method, in 1/2, 1/4, 1/8, 1/16, 1/32 and 1/64 dilutions, inhibitory zones were seen 19, 14, 12, 11, 9 and 9 mm in diameters for BS. 1/32 dilution were realized for both MIC and MBC about this bacterium.

**Conclusion:** The results of this study demonstrate that hydro-alcoholic extract of ADP inhibits and destroys BS. Thus, the present research indicates the antibacterial activities of the medical plant on BS, offering to use as an antibacterial agent. Extraction of active molecules will be the future work to peruse.

**Keywords:** Ashresi date palm, Hydro-alcoholic extract, Antibacterial activities, Bacillus subtilis

# P549 - 1068: ASSESSMENT OF ANTIBACTERIAL EFFECTS OF GLYCYRRHIZA GLABRA AQUEOUS EXTRACT AGAINST STAPHYLOCOCCUS AUREUS WITH AGAR WELL DIFFUSION METHOD.

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**Background and Aim:** Glycyrrhiza glabra (GG) has been used in traditional medicine as antipyretic, antioxidant, anti-inflammatory, antifungal, antiviral agent. The new study was conducted to investigate the antibacterial effects of GG aqueous extract against Staphylococcus aureus (SA) with agar well diffusion method.

**Methods:** Agar well diffusion method was performed as screen test. Macro-broth dilution method was accomplished to determination of MIC value. SA (ATCC 25923) was chosen to survey. Serial dilutions were prepared from aqueous extract in 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8(0.125 g/ml), 1/16 (0.062 g/ml), 1/32 (0.031 g/ml) and 1/64 (0.015 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar well diffusion method, in 1/2, 1/4, 1/8, 1/16, 1/32 and 1/64 dilutions, inhibitory zones were seen 18, 17, 14, 11, 9 and 8 mm in diameters for SA. 1/16 and 1/8 dilution were realized for MIC and MBC about this bacterium, respectively.

**Conclusion:** The results of this study indicate that aqueous extract of GG prevents and destroys SA. Thus, GG can be used in the treatment of bacterial infections. Additional in vivo researches and clinical trials would be needed to justify.

**Keywords:** Glycyrrhiza glabra, Aqueous extract, Antibacterial effects

# P550 - 1075: RAPID MOLECULAR DETECTION OF ASPERGILLUS FLAVUS BASED ON AFLATOXIN SYNTHESIS GENES IN CAKE POWDER

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**Background and Aim:** The main problem in the industry cake powder is microbial corruption, which leads to a decrease in its durability period. It can be said that most baker's products, such as cake, are caused by mold growth such as Aspergillus, Penicillium, Rhizospus and Mucor. Many fungi produce toxic substances called mycotoxins, which cause chronic or acute or injurious poisoning. One of the strongest toxins is aflatoxin produced by the Aspergillus flavus fungi and mildew associated with it is produced.The aim of this study was to detect the rapid Aspergillus flavus based on the bone marrow cluster of aflatoxin in cake powder by molecular PCR method.

**Methods:** 30 samples of cake powder from different brands were collected from Tehran's supermarket and DNA samples were extracted by CTAB method. PCR test was performed using Aspergillus flavus specific primers. It was examined for specificity and limit of detection (LOD).

**Results:** 413-bp PCR product was detected in 1.5% agarose gel electrophoresis. In specificity test with multiple organisms were observed only with Aspergillus flavus Amplicon. None of 30 Cake powder samples were positive.

**Conclusion :**Fortunately, the processed cake powder was pasteurized and there was no infection with Aspergillus flavus fungus by rapid and sensitive PCR technique.

**Keywords:** Aspergillus flavus, Diagnosis, PCR, Mycotoxin, Cake powder

# P551 - 1078: MOLECULAR ISOLATION AND IDENTIFICATION OF PROBIOTIC BACTERIA OF KEFIR AND STUDYING ITS ANTAGONISTIC PROPERTIES ON 5 FOODBORNE PATHOGENS

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**Background and Aim:** Probiotics or acid lactic bacteria, used as primers to produce dairy products, are main factors of fermentation, food protector in addition to important role in taste, smell and texture of food products. Kefir is a probiotic complex originated in the north Caucasus. Generally, Kefir grains include microorganisms such as lactic acid streptococci, lactobacilli mesophilic lactic acid, lactose fermenters and non-fermenters yeasts, acetic acid bacteria. The purpose of this study is molecular isolation and identification of probiotic bacteria of Kefir and studying its antagonistic properties on 5 foodborne pathogens.

**Methods:** The study is experimental and in-vitro. The Kefir sample collected from Kefir grains diluted by physiology serum, cultured in MRS agar, and then put in incubator for 48-72 hours in 7% carbon dioxide, 37°C conditions. After growth, the colonies studied by diagnostic tests like gram stain, catalase, glucose fermentation, amylolytic and proteolytic activity and then their antagonistic properties on 5 pathogen bacteria studied. Then, DNA of active isolates extracted and the molecular identification was done by PCR technique.

**Results:** The results showed that Kefir contains bacteria producing lactic acid and yeast in which lactic bacteria (Entrococcus faecium Strain T2, Entrococcus durans Strain B2, Entrococcus durans Starin 26, Entrococcus fecalis Starin 21, Entrococcus durans Strain 25 and Entrococcus faecium Strain 5) were identified and their phylogenic tree drawn.

**Conclusion:** According to the obtained results, Kefir contains probiotic bacteria of significant biological effects that gram-negative bacteria are resistant against them but they can be utilized in medicine, pharmaceutical and food purposes.

**Keywords:** Foodborne pathogen, Kefir, antagonistic property, probiotic

# P552 - 1087: ISOLATION AND IDENTIFICATION OF SALMONELLA BACTERIA FROM POULTRY CARCASSES USING CULTURE, MOLECULAR AND SEROLOGICAL METHODS

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1. -

**Background and Aim:** Salmonella is a group of bacteria that causes typhoid fever, food poisoning, gastroenteritis, enteric fever and other illnesses in animal and human. The aim of this study was to evaluate the contamination rate of broiler chickens to Salmonella. Five hundred samples of poultry carcasses were collected from one of the slaughterhouses in the city of Mashhad. Isolation and identification of Salmonella based on culture, serology and molecular methods. Fifteen percent of samples were positive. The samples of positive culture were confirmed, using invA gene and PCR method. Serotyping of confirmed strains carried out by polyvalent antisera. Fourteen and one percent of positive samples were belonging to C and D serum groups, respectively. The results of this study suggest that considering the importance of Salmonella in public health, before anything, in order to prevalence rate and determine the serotypes and strains, an epidemiologic study should be done in farms and then authorities will take appropriate action.

**Methods:** Culture, molecular and serological methods.

**Results:** Fifteen percent of samples were positive. The samples of positive culture were confirmed, using invA gene and PCR method. Serotyping of confirmed strains carried out by polyvalent antisera. Fourteen and one percent of positive samples were belonging to C and D serum groups, respectively.

**Conclusion:** The results of this study suggest that considering the importance of Salmonella in public health, before anything, in order to prevalence rate and determine the serotypes and strains, an epidemiologic study should be done in farms and then authorities will take appropriate action.

**Keywords:** Salmonella, identification, culture, molecular, serological

# P553 - 1101: EVALUATION OF HMC LEVEL OF TOMATO PASTE PRODUCT IN KHORASAN RAZAVI PROVIENCE

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**Background and Aim:** HMC test was performed routinely for quality control of tomato products in food microbiology laboratory , HMC is an indicator of raw tomato quality in production of all tomato by products classical HMC test 6 categorized different moulds filament where counted based on AOAC official method 965.41(2010).

**Methods:** In this study 122 Tomato paste samples from 14 tomato paste producer in Khorasan Razvi province were collected during 2015-2016 . The maximum percentage of positive fields permitted for each lot is that represented by a percentage of positive fields not exceeding 50% in accordance with codexs 57 -2008 and 45 % with ISIRI#3767.

**Results:** HMC value of samples were varied from 100-38 % with mean 50 ±16 % , that in 69(56.5%) of samples HMC value were found more than 45% HMC maximum acceptable limit.

**Conclusion:** In survey on positive microscopic fields we determined that most prevalent observed mould filament types categorized as: branching & coarse ( M.F: CLASS : 1, 2) 53% , very fine (M.F:CLASS: 3) 23% and sporulation and alternaria forms (M.F: CLASS : 4,6) 4%.

**Keywords:** HMC, Mould, Tomato

# P554 - 1111: ANTIMICROBIAL ACTIVITY OF ESSENTIAL OIL OF A NATIVE PLANT FROM GORGAN

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**Background and Aim:** Lavandula stoechas genus is an important member of family Lamiaceae, are widely distributed in Golestan province. Lavandula has been used in traditional medicine to treat various diseases. The purpose of this research is to extract the essential oils of the flowers of Lavandula stoechas by steam distillation and evaluated the antibacterial activity.

**Methods:** Extraction of the essential oil of L. stoechas ssp. flowers was obtained by steam distillation (Clevenger) and the chemical compounds of essence were identified by GC-MS analysis. The microbial strains sensitive to the plant in disc diffusion assay were studied for their minimal inhibitory concentration (MIC) values using micro-well dilution assay method. The essential oil was tested against S. aureus, B. sphaericus. E. faecalis, A. salmonella, E. coli and P. aeruginosa bacteria.

**Results:** The main component of essential oil of our plant included Camphor (71.86%), 1,8-Cineole (4.08%), Linalool (3.77%) and Borneol (3.19%). The oil yield was obtained 0.28%. The essential oil of L. stoechas ssp. showed antimicrobial activity against most of the tested standard bacteria strains expects P. aeruginosa and E. faecalis. S. aureus and B. sphaericus with 29-32 mm diameter was showed the highest sensitivity. Dilution of oils until 1/512 showed inhibitory effect on S. aureus.

**Conclusion:** The results showed that the essential oil of Lavandula stoechas was revealed highly inhibitory antimicrobial activity especially on gram positive bacteria. It seems that the presence of camphor (71.86%) in essential oils have caused antimicrobial properties.

**Keywords:** L. stoechas, Essential oil, Clevenger, Antimicrobial activity, GC-MS

# P555 - 1125: STUDY OF ANTIBACTERIAL EFFECT OF FRUIT COCOS NUCIFERA ESSENTIAL OIL AGAINST SOME GRAM NEGATIVE AND GRAM POSITIVE BACTERIA

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**Background and Aim:** In recent years, with deployment of drug resistant and identification multiple disadvantages of chemical drugs, exploration and use natural antibacterial compounds are common. fruit Cocos nucifera has many property that in this study antibacterial effect of its essential oil was evaluated on sevenstrain (Bacillus subtilis,staphylococcus aureus, Streptococcus agalactiae, Listeria monocytogenes, Escherichia coli, Shigella dysenteriae, Salmonella typhi) of important pathogenic bacteria in medicine and veterinary.

**Methods:** The essential oil of the fruit Cocos nucifera by distillation with water and clevenger was extracted. The disk diffusion method was used to measure growth inhibition zone diameter of fruit Pomegranate essential oil.

**Results:** Results only were showed inhibition effect of fruit Cocos nucifera essential oil on B. subtilis with growth inhibition zone diameter 9.11 mm.

**Conclusion:** Fruit Cocos nucifera Pomegranate essential oil has inhibition effect B. subtilis.

**Keywords:** Antibacterial effects, fruit Cocos nuciferaessential oil, pathogenic bacteria

# P556 - 1130: CALCULATE PISTACHIO AFLATOXIN REDUCTION DUE TO RADIOACTIVE GRANITE STONES

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**Background and Aim:** Different methods are available to reduce aflatoxin worldwide, among which ethylene and irradiation have the highest efficiency. In this study, the results obtained from the use of radioactive granite rock as a gamma source and placement of aflatoxin-infected pistachios In close proximity to the controlled conditions, the level of aflatoxin significantly decreases in several steps.

**Methods:** To control the reduction of aflatoxin in pistachios by the action of a radioactive granite bed to 1-pistachio, 2-radioactive granite and 3-standard laboratory, we need to measure aflatoxin. we use MCNPX codes to simulation the test and find relation between aflatoxin reduction and absorbed dose

**Results:** By examining the results of the experiments, we obtain the following equation to estimate the mass of the granite substrate required to reduce pistachio aflatoxin.

**Conclusion:** The effect of reducing aflatoxin by radioactive granite has been designed and implemented. The results show that the reduction of aflatoxin with the increase in altitude and mass of pistachio packets has a direct correlation with the increase in time and radioactive granites, with the study of the results obtained from This step and the introduction of aflatoxin reduction coefficient, an empirical formula to predict the amount of aflatoxin produced in pistachio packets by each radioactive granite bed, is based on the proposed formula between theoretical and practical results of 91%.

**Keywords:** Aflatoxin, pistachio, radioactive granite, aflatoxin reduction factor

# P557 - 1140: PREVALENCE OF CAMPYLOBACTER SPECIES IN RAW BOVINE MILK IN ISFAHAN, IRAN

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**Background and Aim:** Campylobacter spp.is one of the most frequent pathogens of acute bacterial gastroenteritis,which is transmitted mostly via food originating from animals. It may led to Guillain-Barre syndrom, which is a serious neurological disease with symptoms that include flaccid paralysis.

**Methods:** From june 2008 to june 2009, 120 raw bovine milk samples from randomly selected dairy bovine herds in Isfahan, Iran and were evaluated for the presence of campylobacter.

**Results:** In this study, 3 of 120 raw bovine milk samples were found to be contaminated with campylobacter.campylobacter isolates recovered from raw bovine milk were all identified as C.jejuni.

**Conclusion:** Furthermore, to ensure food safety, poultry meats must be properly cooked before consuming.

**Keywords:** Campylobacter, raw milk, bovine, Iran

# P558 - 1144: DETECTION AND IDENTIFICATION OF CAMPYLOBACTER SPP.FROM RETAIL RAW CHICKEN, TURKEY, SHEEP AND GOAT MEAT IN AHVAZ, IRAN

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**Background and Aim:** Campylobacter species are common bacterial pathogens causing gastroenteritis in humans worldwide and the consumption of poultry meats is suspected to be the leading cause of this illness.

**Methods:** From july 2009 to february 2010, a total of 215 raw meat samples from chicken (n=60), turkey ( n=50), sheep ( n=50), and goat( n=45), were purchased from randomly selected retail outlets in Ahvaz,Iran and were evaluated for the presence of campylobacter.

**Results:** Campylobacter spp.isolated from 60 of 215 meat samples (27.9%)examined. The highest prevalence of campylobacter spp.was found in chicken mea t(61.7%), followed by turkey meat (36.0%), sheep meat (6.0%), and goat meat (4.4%). All 60 campylobacter strains identified as C.jejuni abd C. coli were also positive by using PCR.

**Conclusion:** To ensure food safety, poultry meats must be properly cooked before consuming.

**Keywords:** Campylobacter, rae meat, chicken, turkey, sheep, goat

# P559 - 1145: COMPARATIVE STUDY OF IMPEDANCE, CHROMOGENIC AND REFERENCE METHODS TO DETECT CONTAMINATION TO ENTEROCOCCI IN FOOD

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**Background and Aim:** Enterococci are important agents from the aspect of food safety. As some bacteria in this group are resistance to freezing conditions, so presence of enterococci in excessive amount in foods, means undesirable sanitary situation during production and distribution of foods. Enterococci are known as indicator microorganism in many countries and excessive number of this group in foods means fecal contamination.

**Methods:** The reference method was based on IRAN's national standard method No.2198. The chromogenic method was done by spreading the sample material on the surface of enterococci agar plates, and the impedance method was done by measuring the variation of electrical resistance of broth media (M-value) which used in this method.

**Results:** The results showed that the sensitivity and specificity of the impedance method were 81.2 % and 75.9% respectively and the observed overall agreement was 79.2% with reference method. The sensitivity and specificity of the chromogenic method were 100 % and 37.9% respectively and the observed overall agreement was 76.6% with reference method. Also observed overall agreement was 71.4% between chromogenic and impedance methods.

**Conclusion:** The Statistical analysis between three methods by using Cochran's test showed that there is a significant difference between three methods. In other meaning the studied methods have not shown the same performance. But in the other hand as a homogenus matrix of raw milks, the impedance and chromogenic methods have 88.3% and 88% overall agreement with reference method respectively. So these methods could be used as alternative techniques instead of reference method for detecting enterococci in raw milk.

**Keywords:** Enterococcus, Impedance, choromogenic, reference

# P560 - 1148: POWDERED INFANT FORMULA (PIF) MILK CONTAMINATED WITH ENTEROBACTER CLOACAE

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**Background and Aim:** Enterobacter cloacae is a gram-negative opportunistic pathogen and cause disease in plants and humans. The goal of this study was to isolation of Enterobacter cloacae strains from consumed powdered infant formula (PIF) milk in determination and determination antimicrobial susceptibility pattern.

**Methods:** In present research, a total 125 consumed powdered infant formula milk in NICU ward were surveyed. Isolation and Identification of microorganisms was carried out according to FDA method. Antimicrobial susceptibility test was performed by using the standard disc diffusion method based on CLSI recommendations.

**Results:** Enterobacter cloacae was isolated from 2 (1.6%) of 125 powdered infant formula milk samples. The results showed that isolated strains are sensitive to most antibiotics. All isolates were resistant to amoxicillin.

**Conclusion:** Contamination of powdered infant formula only could be reduced or prevented by monitoring the critical control points and taking appropriate action during the processing. It is imperative to prepare the infant formula milk foods according to the manufacturer's instruction and in an aseptic condition.

**Keywords:** Powdered infant formula milk, Enterobacter cloacae, antimicrobial susceptibility

# P561 - 1171: PREVALENCE AND ANTIMICROBIAL RESISTANCE OF SALMONELLA ISOLATED FROM RETAIL RAW TURKEY , OSTRICH , AND PARTRIDGE MEAT IN IRAN

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**Background and Aim:** The objective of this study was to determine the Salmonella prevalence, the serotypes involved and antimicrobial susceptibility patterns of Salmonella isolates recovered from retail raw turkey, ostrich, and partridge meat in Esfahan, Iran.

**Methods:** A total of 249 samples of turkey, ostrich, and partridge meat were purchased from 8 randomly selected retail outlets from April 2006 to July 2007.

**Results:** All samples were evaluated for the presence of Salmonella, serotyped and tested for antimicrobial susceptibility. There was an overall Salmonella prevalence of 6.8%. The prevalence of Salmonella was statistically significantly higher in turkey meat (9.7%) than in ostrich meat (4.6%) ($P \leq 0.05$). No Salmonella was isolated from partridge meat samples. Salmonella isolates recovered from turkey and ostrich meat samples were of 4 different serotypes including Salmonella enterica ser. Typhimurium, Salmonella enterica ser. Enteritidis, Salmonella enterica ser. Agona, and Salmonella enterica ser. Paratyphi B. The susceptibility of the 17 isolated strains to 12 antimicrobial drugs was determined using the disk diffusion method. Resistance to nalidixic acid was the most common finding (58.8%), followed by resistance to tetracycline (41.2%), streptomycin (29.4%), trimethoprim (23.5%), chloramphenicol (11.8%), and ciprofloxacin (5.9%). Salmonella isolates recovered from ostrich meat samples were susceptible to all 12 antimicrobial agents.

**Conclusion:** To our knowledge, this is the first study on the prevalence of Salmonella in partridge meat and first report of the isolation of Salmonella spp. from retail raw turkey and ostrich meat in Iran.

**Keywords:** Salmonella, turkey, ostrich, partridge, meat

Microbial Metabolites and Diseases

## P562 - 78: REVIEW OF MICROBIAL PATTERN OBTAINED FROM DIABETIC FOOT ULCERS: A SYSTEMATIC REVIEW

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**Background and Aim:** Today, diabetes is considered one of the most common metabolic disease in the world.Diabetic foot ulcer complications of diabetes in the world is considered as one of the most common complications of diabetes in the world. Identifying diabetic foot infection due to reduced inflammatory response to invading microorganisms is a complex problem. Therefore this study was conducted ahead with the aim of obtaining this template.

**Methods:** A systematic review by searching the databases google-scholar google-irct-magiran-iranmedex-sid-pubmed-ScienceDirect and articles published from 1998 to 2016with the key word Infection, Diabetic foot ulcers, Microbial pattern were both Persian and English.

**Results:** Review of 20 articles showed that The most common pathogen is still Staphylococcus aureus by 46/38 per cent. A study in 1998 showed that 90% of wounds had poly-microbial infection. And in the 6/91% of wound cultures gram-positive cocci has been accessed. Another study showed that after Staphylococcus aureus, Enterobacteriaceae family is the most frequent cause of infection in diabetic foot ulcers with 21%. After these bacterias, E.coli is the next rank with 15%.

**Conclusion:** Our study showed that most diabetic foot ulcers are in the form of poly microbial infections. And between different bacteria Staphylococcus aureus is the most common. Due to drug-resistant of this bacteria have to think about necessary measures in order to deal with this bacteria.

**Keywords:** Infections, diabetic foot ulcers, pattern microbial, drug resistance

# P563 - 107: THE ANTIMICROBIAL EFFECT OF HYDROALCOHOLIC EXTRACT OF OAK ON THE POSITIVE AND GRAM-NEGATIVE BACTERIA

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**Background and Aim:** Infectious diseases are the most common diseases in the world. That impose huge economic losses to society. Because of the increasing antibiotic resistance, identify the antimicrobial properties of medicinal plants is of particular importance.

**Methods:** In this study, the antimicrobial activity of oak extract has been compared with some common antibiotics. Extraction were done in Soxhlet extractor set by equal proportions of water and ethanol extracts of oak.The effect of three concentrations (25, 50, 75) mg /ml by using disk diffusion method on Staphylococcus aureus and Streptococcus agalactiae and Salmonella typhimurium bacteria was tested.

**Results:** The results showed that the effect of extract on the bacteria studied was dose-dependent. In comparison to antibiotics, the effect of concentration of 75 micrograms per ml of extract on the Streptococcus agalactiae was the same amikacin, less than kanamycin and has been more tobramycin. This concentration of extract had the same effec kanamycin, more than amikacin and less than tobramycin on Staphylococcus aureus. This effect on Salmonella typhimurium is less than kanamycin and more than tobramycin.

**Conclusion:** The results of this study showed that anti-microbial effect was dependent in dose-extract. It can be pointed out that oak in Iran compounds of antibacterial properties.

**Keywords:** Oak, antibacterial, Soxhlet extractor, disk diffusion

# P564 - 144: DISTRIBUTION OF VIRULENCE GENES, ENTEROTOXIN AND BIOFILM FORMATION AMONG ENTEROAGGREGATIVE ESCHERICHIA COLI (EAEC) STRAINS ISOLATED FROM STOOLS OF CHILDREN WITH DIARRHEA IN SOUTH EAST IRAN

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**Background and Aim:** Enteroaggregative Escherichia coli (EAEC) is commonly associated with pediatric diarrhea, in developing countries. Objectives: In this study, we investigated the distribution of virulence genes, enterotoxin and biofilm formation among EAEC strains isolated from stools of children with diarrhea.

**Methods:** A total of 464 diarrheic stools were screen for the presence of E. coli using conventional tests. Well isolated colonies were then evaluated for the presence of EAEC diagnostic genes (aggR and pCVD432) by duplex polymerase chain reaction (D-PCR). Positive samples were further subjected to three sets of multiplex-PCR for detection of fimbrial subunits (AAF), serine protease autotransporter toxins (SPATE) and at least one enterotoxin gene. Hemolytic activity was observed on sheep blood agar. Biofilm formation was measured by using a microtiter plate assay.

**Results:** 23 were identified as EAEC. All EAEC carried a 630-bp fragment of the plasmid (pAA) encoded pCVD432 and aggR genes. Four major EAEC fimbriae variants aggA, agg4A, agg3A and aafA were detected, with the frequencies of 21.7% (n = 5), 26.8% (n = 6), 21.7% (n = 5) and 4.3% (n = 1), respectively. The class I and II virulence toxins pic, sat, sepA, pet and sigA were detected with frequencies of 56.5% (n = 13), 30.4% (n = 7), 26.8% (n = 6), 21.7% (n = 5) and 4.3% (n = 1), respectively. A heat-stable Shigella enterotoxin-1 gene (astA) was detected in 17.3% (n = 4) of the cases.

**Conclusion:** Quantification of the biofilm revealed six isolates with strong biofilm.

**Keywords:** Enteroaggregative Escherichia Coli, Virulence, Genes, Biofilm

# P565 - 161: ISOLATION, CHARACTERIZATION AND COMPARISON OF ANTI-CANCER EFFECT PROLINE DEHYDROGENASE ENZYME OF PSEUDOMONAS PRODUCING PROVINCE FARS WITH PROLINE DEHYDROGENASE RECOMBINANT PF-5 WILD-TYPE STRAIN (BAA- ATCC 477)

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**Background and Aim:** Pseudomonas produces proline dehydrogenase enzyme proline dehydrogenase that increased activity by foreign routes p53 activates apoptosis. The aim of this study was to isolate and identify isolates of Pseudomonas produce this enzyme from soil Shiraz recombinant enzyme proline dehydrogenase and comparison with the anti-cancer activity against leukemia cell line K562.

**Methods:** In this study, 15 soil samples were collected and screened for enzymes involved in the metabolism of bacteria producing proline rich culture technique in PYP that proline as a sole source of carbon and nitrogen, respectively. Single colonies colony obtained on the basis of morphological, biochemical and molecular tests were identified. Then cell extracts The enzyme was purified to revive early NAD + and INT + PMS. Enzyme activity and pure on leukemia cell line K562 were studied.

**Results:** The two isolates No. 7 and No. 5, respectively, Pseudomonas putida and fluorescence, were known as the sample 7 and recombinant anti-cancer activity showed over 80 percent.

**Conclusion:** Isolated from soil in their activity compared to recombinant enzyme proline dehydrogenase producer Strain is acceptable and The results showed that this enzyme can be used as an effective treatment for leukemia cell line.

**Keywords:** Pseudomonas, proline dehydrogenase, enzyme recombinant, soil

# P566 - 186: EFFICACY OF NONTOXIC SALMONELLA AS THERAPEUTIC STRATEGY IN COLON CANCER CELLS

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**Background and Aim:** Based on previous studies it has been shown that certain bacteria are associated with human cancers. It seems that, Colon cancer cells are match for modified Salmonella strains However, there is risk for using Salmonella as part of cancer therapy. There has long been interest in using genetically engineered microbes to target and destroy cells within solid tumors. It could be conducted that, microbiological study open new window as a significant way in developing some strategies that will help in the overall colorectal cancer means of using Salmonella as part of a cancer therapy.

**Methods:** This strategy focused on two important elements: genetically altered Salmonella strains and colorectal cancer cells entrenched into mice. In fact, Efficiency of Attenuated Salmonella enterica Serovar Typhimurium in Bacterium-Mediated Tumor Therapy first don by eliminate the toxicity of Salmonella in humans by modifying the lipopolysaccharide structure (LPS) of the bacterial membrane that makes sepsis. After deleting these slices of the genome, it could be possible to inject the modified Salmonella into tumor-bearing mice

**Results:** On a larger scale, this therapeutic strategy may be applicable to different types of cancer especially colorectal cancer.

**Conclusion:** It would probably, be used in combination with chemotherapy and radiation therapy to gain effective patient response toward tumor elimination.

**Keywords:** Colon Cancer Cells, Salmonella , chemotherapy

# P567 - 245: EVALUATION AND COMPARISON OF PRODUCTION OF HYALURONIC ACID FROM STREPTOCOCCUS SALIVARIUS SUBSP. THERMOPHILUS AND ISOLATED STREPTOCOCCUS THERMOPHILUS SAMPLES FROM YOGHURT

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**Background and Aim:** Hyaluronic acid (HA), also known by the brand name Hyaluronan. Streptococcus equi sub. Zooepidemicus is the primary strain from which the HA is produced; However, being pathogenic for humans and animals has led to the restriction of the use of this strain. The necessity for using this fabulous material lead to investigate non-pathogenic strains to produce this material.

**Methods:** Pour-plate and surface methods on STA medium. To identify the isolated strains ,biochemical tests and polymerase chain reaction (PCR) were used.

**Results:** The data showed that glucose and fructose, yeast extract, Tryptone, Temperature 50 ° C, pH 6.2, STA-rich medium to increase growth and HA production.

**Conclusion:** The results of this study showed that the sources of carbon, nitrogen, temperature, pH and types of medium are effective on producing of hyaluronic acid by the strains. This study indicates that fructose and glucose as carbon sources have efficient effects on the growth of strains and contributed to the production of the hyaluronic acid.

**Keywords:** Hyaluronic acid, Streptococcus thermophilus, PCR

# P568 - 282: ISOLATION AND CHARACTERIZATION OF MYXOBACTERIA PRODUCING ANTIMICROBIAL SUBSTANCES FROM DIVERS IRANIAN HABITATS

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**Background and Aim:** The important problem of antibiotic resistance enforces the search for new pharmaceutically relevant compounds. Here, especially screening for a different group of microorganism and new species discovering are becoming important once again. Only since about 30 years, the myxobacteria have become one of the most fascinating objects of microbiological research and screening for new antimicrobial agents. They are known to be very potent producers of secondary metabolites and here especially antibiotics. Myxobacteria are soil bacteria that move by gliding and have an astonishing life cycle culminating in fruiting body formation. The present work deals with the isolation of myxobacteria producing antimicrobial substances and new myxobacterial natural products from the unexplored soil of Iran.

**Methods:** Each samples (soil, wood,...) has to be place on water agar+ living E.coli for predators as well as on St21 with filter papaer for isolation of cellulose decomposers. after several transfers of isolated culture on water agar the purity can be checked by microscope. next step is harvest of myxobacterial cultures in liquid media.serial dilution of raw extracts to check for antimicrobial activity and then select raw extracts showing inhibition for HPLC/ Fractionatin.

**Results:** Until now we could isolated and identification more than 30 strains of this bacteria. Antimicrobial test against 11 strains have done. Fortunately the most of them showing a strong inhibition >C.

**Conclusion:** In nature the diversity of myxobacteria is much higher than captured by standard cultivation techniques Especially new families, genera and species harbor a high potential to find new secondary metabolites.

**Keywords:** Myxobacteria, Antimicrobial substances, Iranian habitats

## P569 - 299: PEDERIN; A BACTERIAL TOXIN WITH THERAPEUTIC VALUES

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**Background and Aim:** Paederus fuscipes is the main cause of linear dermatitis in northern Iran. The responsible agent of this lesion is a toxin, named pederin, produced by bacteria within this beetle. DNA sequencing data reveal a significant relationship between these endosymbiont bacteria and Pseudomonas aeruginosa. Pederin is an amide with two tetrahydropyran rings that were first identified 54 years ago in Italy. After that, researchers were discovering related structures (Onnamides, Mycalamides, Theopederins and Irciniastatins, such as psymberin) in New Zealand from sponges. These toxin groups were named the pederin family of compounds.

**Methods:** Beyond dermatitis effect of the compounds, their beneficial cytotoxic properties were started to consider by treating cell lines with pederin and its derivatives. Mitosis inhibition, chromatin fragmentation, cellular busting, vacuolization, and eventually cell lysis observed from that examination. The comparison of pederin effects on normal and cancerous cell lines indicated the anticancer properties of this compound.

**Results:** The mechanism of these effects is related to their binding ability to the E site in the 60s subunit of eukaryotic ribosome that inhibits protein translation. Further researches showed other cytotoxic effects that apoptosis induction, the inhibition of p21ras biosynthesize and immunosuppressant effects could be mentioned from that, also they could be effective for cancers which drug resistant were observed previously.

**Conclusion:** Over all, results indicated that pederin could be a valuable agent for therapeutic aims but its isolation needs more investigation.

**Keywords:** Pederin, Bacterial Toxins, Antineoplastic Agents, Protein Synthesis Inhibitors

# P570 - 312: TRADITIONAL TREATMENT OF LEISHMANIASIS IN SOUTHERN IRAN

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**Background and Aim:** Leishmaniasis is one of the most common parasitic skin diseases in the southern tropical regions of Iran. Although this disease is not fatal, after about 6 to 12 months, it will leave a scar, which has a negative effect on people's appearance.

**Methods:** However, traditional and local treatment has been receiving the attention of residents of these areas for a long time. One of the most traditional treatments has been burning wound. This treatment has been carrying out by means of flame or caustic chemical materials.

**Results:** With this method, not only would the disease be terminated, but this would also prevent the disease's expansion. In the one hand, applying this form of treatment was impossible on the entire body, and on the other hand; in some cases, the burned wound has been as malformed as the scar. Using opium (locally), shaving wound, heat, and cold therapy, using homemade burn poultice and the sheep body fat also have been other traditional treatments.

**Conclusion:** Recently, using a plant that grows naturally in salt and has needle-shaped leaves is used for leishmaniasis's scar therapy in some areas. Soot of the plant has a relatively positive effect on the scar if it is rubbed on the wound several times. Discovering the active ingredients of the plant is under investigation. Despite the fact that traditional treatment approaches are at risk, they may open new avenues to future studies.

**Keywords:** Traditional treatment, leishmaniasis, southern, Iran

# P571 - 374: TUBERCULOSIS PRESENTING AS PLURAL AND ABDOMINAL INVOLVMENT IN HIV INFECTION: CASE REPORT OF IRAN

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**Background and Aim:** Tuberculosis (TB) continues to be a significant threat to global health. In 2016 there were over 10.4 million newly emerging cases of TB. TB and HIV co-infection with poor outcome for both diseases remains a serious public health concern and TB is the most common opportunistic infection in HIV cases in developing countries. TB has been reported as a major cause of death among HIV individuals. The clinical feature of disease varies depending on the severity of immunosuppression. Pulmonary TB and with progressive immunosuppression; extra pulmonary involvement are most common. Other organs involved in tuberculosis with HIV infection include central nervous system, bone marrow and other viscera.

**Methods:** With a suspicion of TB further evaluation by radiological examination, Acid Fast Bacilli (AFB) smear and ascites fluid PCR for Mycobacterium tuberculosis were done.

**Results:** According to test diagnosis of tuberculosis was made.

**Conclusion:** The bacteria was isolated and identified Mycobacterium tuberculosis using PCR assay The best of our knowledge, there are few reports of simultaneous plural and abdominal tuberculosis in Iran.

**Keywords:** Tuberculosis, HIV, PCR

# P572 - 402: EPIDEMIOLOGICAL STUDY OF HELICOBACTER PYLORI INFECTION IN REZVANSHAHR CITY

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**Background and Aim:** Helicobacter pylori infection is related to economic and social status, personal hygiene, age as well as other factors. The present study was conducted to determine the prevalence of Helicobacter pylori infection in Rezvanshahr city and to investigate the relation between the infection and factors such as age, gender, education level and so forth.

**Methods:** This cross sectional descriptive survey was carried out for six months (Winter 2015 to Summer 2016) on 294 blood specimens of the people who visited Rzvansahr clinical diagnosis laboratory. Data on demographic properties, antibiotic administration during the last month, stomach endoscopy, type of drinking water and the reason for visit were collected by a questionnaire. Serum samples were evaluated by ELISA to detect anti-Helicobacter IgG. Data were analyzed by chi square method ($p<0.05$).

**Results:** Among 294 serum samples, 143 (48.6%) contained IgG. The highest infection rate was observed in > 36 year old people which was statistically significant (P=0.046). The highest H. pylori positive results was observed in rural people (45.8%) which was higher than that of citizens (29.9%) indicating a significant correlation between residence location and infection (P=0.0001). Statistically, no significant correlation was observed between H.pylori positive results with education level (p=0.45), job status (p=0.18), family size (p=0.55), reason for visit (p=0.44), antibiotic administration during the last month (p=0.49), stomach endoscopy (p=0.97) and type of drinking water (p=0.72).

**Conclusion:** The results of this research showed high rate of H. pylori infection in Rezvanshahr city with the highest infection rate being seen in middle-aged people.

**Keywords:** H. pylori, ELISA, serum

# P573 - 441: A REVIEW OF THE ROLE OF MYCOBACTERIUM TUBERCULOSIS IN THE INDUCTION OF LUNG CANCER IN TB PATIENTS

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**Background and Aim:** About 20% of worldwide deaths occurs through lung cancer in cancer patients. Recently relationship between lung cancer and pulmonary tuberculosis has attracted the attention of scientists. In this study, a review of the relationship have been conducted between the M.tuberculosis and L-forms of this bacterium, with lung cancer and other organs and mechanisms of tumorigenicity.

**Methods:** A literature review have been done with key words of M.tuberculosis, mechanisms of tumorigenicity, lung, apoptosis, necrosis from Persian and English resources including PUBMED and Scopus.

**Results:** Large body of studies even weakly confirmed a relation between lung cancer and Kaposi's sarcoma with TB and its L-forms. Induction of Apoptosis and necrosis, or reactivation of tuberculosis , especially in immunosuppressed patients, the role of IL-17 and TNF-a in blocking the expression of p53, or increased expression of Bcl-2 and decreasing BaxT and Bad expression, underreleasing of mitochondrial cytochrome oxidase and inhibition of the activation of caspase-3 have been discussed in relation of TB and its carcinogenicity.

**Conclusion:** Comprehensive epidemiological studies have been need to be conducted to prove a definitive etiologic association between the TB and cancer. In addition paying attention to increasing general health of population is required to be done by officials for further prophylaxis.

**Keywords:** Tuberculosis, lung cancer, Iran, Apoptosis and necrosis

# P574 - 465: INTRODUCING PROMICROMONOSPORA SP. UTMC 1326 AS AN EXOPOLYSACCHARIDE PRODUCING RARE ACTINOBACTERIUM AND EVALUATION OF ANTIMICROBIAL ACTIVITY OF THE EXOPOLYMER

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**Background and Aim:** Exopolysaccharides (EPS) are high molecular weight biopolymer produced by various microorganisms. EPS has various applications in different industries, as stabilizers, emulsifiers, expanding agents, etc. Actinobacteria are valuable bacteria with various applications in biotechnology. Up to now, more than 85% of natural antibiotics are produced by actinobacteria. However, there are few reports on the potential of EPS producing actinobacteria. The aim of current project is the isolation of EPS producing actinobacteria from various soils of Iran.

**Methods:** Various soil samples of Iran were cultured in ISP2 agar and incubated at 28 ◦C for 2 weeks. The isolates were inoculated in BHI medium+5% sucrose as a screening medium. EPS producing actinobacteria were cultured in the flasks and incubated at 28◦C, 200 rpm for 120h. The EPS was extracted by cold ethanol. After evaporation of the solvent, the EPS was dissolved in warm distilled water and its antimicrobial activity was assayed using agar diffusion method. The selected strains were identified by 16SrRNA gene sequence analysis.

**Results:** From 120 soil samples, 38 strains of actinobacteria produced EPS producing. Among them, 7 strains produced about 10-15 g/l EPS. Some exopolymers had antimicrobial activity against Staphylococcus aureus, Candida albicans, Bacillus subtilis or Aspergillus niger. EPS producers were belonged to the Promicromonospora, Micromonospora, Streptomyces and Nocardia.

**Conclusion:** Promicromonospora sp. UTMC 1326 with 99.68% similarity to Promicromonospora xylanilytica had the highest activity in EPS production and antibiotic activity. Further researches are doing to elucidate the structure of the EPS.

**Keywords:** Actinobacteria, Actinomycetes, Exopolysaccharide

# P575 - 522: BACTERIA, FRIEND OR FOE: THE USE OF BACTERIA IN CANCER THERAPY

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**Background and Aim:** Cancer is a type of disease in which abnormal cells proliferate in an uncontrolled way and can affect adjacent tissues.Today the side effects of routine cancer treatment procedures for patients are very painful and sometimes unbearable. Hence the need for new approaches that allow more accurate targeting of the tumor tissue is quite felt.Among existing methods, treatment by bacteria has long been considered as an approach. But due to some issues such as toxicity to the host it has been less successful.

**Methods:** We have used Pubmed, NCBI and 40 articles.

**Results:** To overcome these obstacles and further development of this type of treatment, the bacteria are used in many ways.One such method is engineering of the gene of bacteria to reduce their toxicity as well as increase their specificity. Also for more and better effectiveness of available treatments, simultaneous and concurrent use of bacteria to treat cancer with routine methods are considered and some successes are observed.

**Conclusion:** The aim of this study is to investigate new uses of bacteria as a tool to treat cancer.

**Keywords:** Tumor, the use of bacteria, cancer treatment

# P576 - 524: PROGNOSTIC VALUE OF SYSTEMIC TRIMETHYLAMINE-N-OXIDE LEVEL IN CARDIOVASCULAR PATIENTS

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**Background and Aim:** Millions of healthy bacteria colonize our guts from the moment we are born. Changes in the composition and abundance of these commensals affect the entire immune system and can predispose us to a variety of diseases including intestinal infections and cardiovascular disease. Recent metabolomics and animal model studies show trimethylamine-N-oxide (TMAO), an intestinal microbiota dependent metabolite formed from dietary trimethylamine-containing nutrients such as phosphatidylcholine (PC), choline, and carnitine, is linked to coronary artery disease pathogenesis.

**Methods:** We investigated the relationship among intestinal microbiota-dependent metabolism of dietary phosphatidylcholine, TMAO levels, and adverse cardiovascular events in humans.

**Results:** Metabolomics studies recently discovered that certain dietary nutrients possessing a trimethylamine (TMA), participate in the development of atherosclerotic heart disease. A meta-organismal pathway was elucidated involving gut microbiota–dependent formation of TMA and host hepatic flavin monooxygenase 3– dependent (FMO3-dependent) formation of TMA–N-oxide (TMAO), a metabolite shown to be both mechanistically linked to atherosclerosis and whose levels are strongly linked to cardiovascular disease (CVD) risks. Collectively, these studies reveal that nutrient precursors, gut microbiota, and host participants along the meta-organismal pathway elucidated may serve as new targets for the prevention and treatment of CVD.

**Conclusion:** The production of TMAO from dietary phosphatidylcholine is dependent on metabolism by the intestinal microbiota. Increased TMAO levels are associated with an increased risk of incident major adverse cardiovascular events.

**Keywords:** Gut microbiota, Cardiovascular disease, trimethylamine-N-oxide

# P577 - 529: ISOLATION AND SCREENING OF MARINE LIVING ACTINOBACTERIA AS A SOURCE OF ACETYLCHOLINESTERASE INHIBITORS

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**Background and Aim:** Alzheimer's disease (AD) currently accounts for 60–80% of dementia cases. New effective pharmacotherapeutics are required for age-related neurodegenerative diseases seriously. A promising approach for the symptomatic treatment of AD has been dominated by the cholinesterase inhibitors (ChEIs) among other targets.

**Methods:** In the present study, an effort was made to screen marine sediments collected from 41 geographical locations of Caspian Sea and Persian Gulf.

**Results:** Considering only 39% of collected samples were from Caspian Sea, the majority of isolates (55.1%) were obtained from Caspian Sea.Thirty out of 223 isolates were fermented and screened for anti-acetylcholinesterase activity using qualitative and quantitative methods. The majority of the isolates were from genera including Streptomyces sp., Micromonospora sp., Promicromonospora sp. and Nocardioides sp. Qualitative assay showed a significant number, constituting 44.1%, of the isolates screened in this study were active in TLC bioautography showing inhibition zone more intense than 0.5µg physostigmine. All tested extracts were non-toxic according to Brine shrimp lethality assay in less than 100µgml-1. More than 50% of the active extracts in primary assay, showed more than 10% inhibition in quantitative assay. This result is higher in percent (15.8%) than a study on this activity from microbial associates.

**Conclusion:** From the results of our study and the recent discovery of an AChEI called Geranylphenazinediol from microbial sources, we conclude AChEIs are quite prevalent in marine habitats and several potential inhibitors are waiting to be discovered.

**Keywords:** Marine sediment, Marine Actinobacteria, AChE inhibition, Alzheimer

# P578 - 543: IN VITRO ANTI-DIABETIC ACTIVITY OF SECONDARY METABOLITES PRODUCED BY STREPTOMYCES ZAGROSENSIS

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**Background and Aim:** Alpha-Amylase is involved in the breakdown of long chain carbohydrates and alpha-glucosidase breaks down starch and disaccharides to glucose for intestinal absorption. Alpha-amylase and glucosidase inhibitors are the potential targets for the development of lead compounds for the treatment of diabetes . The aim of the study was to evaluate the anti-diabetic activity of the crude extract from Streptomyces zagrosensis, that produce N-methylated cyclopeptides isoforms of persipeptide A and B.

**Methods:** Alpha-glucosidase inhibition activity was determined using hydrolyzing of p-nitrophenyl-α-D-glucopyranoside (PNPG) in presence of extract with acarbose as a control at the concentration range of 25-400 µg/ml. Alpha-amylase inhibition activity was determined using hydrolyzing of starch in presence of extract with acarbose as a control at the concentration ranging from 25-100 µg/ml.

**Results:** Alpha-glucosidase activity was inhibited by the extract (IC50=176µg/ml) compared to the acarbose with IC50=86 µg/ml. The extract exhibited alpha-amylase inhibition activity with IC50=248 µg/ml, compared to acarbose with IC50=56 µg/ml values.

**Conclusion:** The commonly used drugs intreatment of diabetic have adverse systematic effects Therefore, the discovery of natural resources with anti-diabetic activity is still among the current drug discovery efforts. The extract of S. zagrosensis exhibited alpha-glucosidase and alpha-amylase inhibition activity. It is inferred that persipeptides (with a drug-like molecular weight of 619 D) in the extract can be responsible and this activity provides preliminary evidence to support the potential of this peptides for further investigations to reveal their Anti-diabetic potential.

**Keywords:** Anti-diabetic activity, persipeptides, secondary metabolites, alpha-amylase, alpha-glucosidase

# P579 - 549: ISOLATION AND IDENTIFICATION OF TWO ALKALOIDS WITH ANTIOXIDANT ACTIVITY FROM ACTINOKINEOSPORA SP. UTMC 968

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**Background and Aim:** Secondary metabolites of Actinokineospoa sp. UTMC 968, an indigenous rare actinomycete belonging to the family Pseudonocardiaceae, was investigated with the aim of finding structures with novel activities. Two alkaloid structures, N-acetyltyramine and N-acetyltryptamine with antioxidant activity, were reported for the first time from family Pseudonocardiaceae.

**Methods:** After large scale fermentation and metabolite solvent extraction using ethylacetate, separation of the dominant compounds with diverse polarity was done using PTLC on silica gel 60F254 plates. Main structures were investigated using MS, 1H-NMR and 13C-NMR analyses. DPPH radical scavenging assay was performed for fractions in TLC-based assay. Quantitative anti-radical activity, using a 100µM methanolic solution of DPPH and reduction in absorbance at 517nm was compared to the reference antioxidants.

**Results:** Detected compounds were identified as a 180.0999 Da structure called N-acetyltyramine (C10H13NO2) in fraction-C and a 225.100 Da structure called N-acetyltryptamine (C12H14N2O) in fraction-E. Both fractions revealed qualitatively and quantitatively a remarkable antioxidant activity with IC50: 64.7µg/mL and IC50:131.3 for N-acetyltyramine and N-acetyltryptamine containing fractions, respectively. This activity is comparable with radical scavenging activity of BHT (IC50:74.3µg/mL) and ascorbic acid (IC50: 104.2µg/mL).

**Conclusion:** Other biological activities such as antitumor properties and acting as a putative melatonin receptor antagonist with no acute toxicity have been published for N-acetyltyramine and N-acetyltryptamine, respectively and owing to antioxidant properties, they can be used for extending overall lifetime of pharmaceutical product. This study led to the introduction of a new resource for these compounds and revealing another biological activity of them.

**Keywords:** Rare actinomycetes, secondary metabolites, antioxidant activity

# P580 - 564: INVESTIGATION OF RELATIONSHIP BETWEEN EPSTEIN-BARR VIRUS AND BARF-1 GENE CODED BY THE VIRUS WITH GASTRIC ADENOCARCINOMA

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**Background and Aim:** Several etiologic factors such as infection with epstein-barr virus have a role in the pathogenesis of gastric cancer, but still there is not enough information about the pathogenesis and the amount of epstein-barr virus tissue communication with gastric cancer.Therefore, identification of disease genes has a significant role in improving the prognosis of patients. The aim of this study is investigation of relationship between epstein-barr virus and BARF-1 gene coded by the virus in the pathogenesis of gastric adenocarcinoma.

**Methods:** Were selected the number of 200 cases related to paraffin blocks of patients with gastric cancer along with paraffin blocks of the non-sufferers persons. After extracting DNA, PCR was performed from paraffin blocks for discover EBV genome and determine BARF-1 gene with specific primers. In addition, the degree of differention and stage of gastric cancer samples were also investigated.

**Results:** Was represents the thtee positive samples for epstein-barr virus in the case group and be negative all group. So there wes no statistically significant relationship between case and controls group in terms of this virus ($p>0.05$). BARF-1 gene in each of the three positive samples were also negative. Were 41% of cancers cases in first grade, 52% of cancers in second grade and 7% of cases in third grade.

**Conclusion:** The results show that epstein-barr virus has little role in the incidence of gastric adenocarcinoma in the geographical area studied that gastric cancer is highly prevalente.

**Keywords:** Epstein-barr virus, gastric adenocarcinoma, BARF-1

# P581 - 576: TARGETED THERAPY OF PROSTATE CANCER BY ADOPTIVE MSCS TRANSDUCED WITH A FUSION PROTEIN EPCAM-DT

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**Background and Aim:** Since nonspecific and low targeting efficiencies, besides short half-lives of most of cancer drugs are the major limitations for the treatment of cancers, using mesenchymal stem cells (MSCs) are non-immunogenic nature with tumor-tropic and preferential migratory properties transport pro-apoptotic, anti-proliferative, anti-angiogenic reagents, and chemotherapy compounds towards localized and metastatic tumors have been served as efficient targeted delivery vehicles. Adoptive transfer of tumor infiltrating MSCs transduced with cancer stem cells (CSCs) antigen receptors, as immune targets, in addition to applying a toxin significantly enhance tumor homing capacities and cells cytotoxicity, respectively.

**Methods:** Therefore, we planned a hypothesis to construct a conjugate of a bacterial cytotoxin with immune target moiety (immune-toxin), as the cytotoxic protein selectively acts when MSCs home into the tumor's vicinity and bind to tumor cells.

**Results:** A chimeric protein (EpCAM-DT) consists of specific surface antigen receptor (EpCAM) links to the active site of Diphtheria toxin (DT) transducing to MSCs, enables them to target the CSC marker EpCAM. The therapeutic efficacy of MSCs expressing EpCAM-DT fusion protein can be evaluated on PC3M prostate cancer cell line in vitro. Most probably, these modified MSCs could better kill PC3M tumor cells in vitro than any general chemotherapy or MSCs alone.

**Conclusion:**MSCs comprising a CSC specific surface antigen genetically fused to a recombinant bacterial toxin (EpCAM-DT) would have most likely significant anti-tumor activity against prostate cancer. Therefore, this novel MSCs' targeting system is highly effective due to more specific tumor targeting and in situ toxicity, which greatly increases their proficiency result in dramatic anti-tumor effects.

**Keywords:** Mesenchymal stem cells (MSCs), cancer stem cells (CSCs), prostate cancer, bacterial toxin, Targeted therapy, EpCAM, Diphtheria toxin (DT)

# P582 - 586: COMPARISION HB A1C WITH FUNGUS ISOLATED FROM HEALTHY AND INVOLVEMENT TISSUE IN DIABETIC FOOT ULCER

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**Background and Aim:** Diabetic foot ulcers caused by uncontrolled diabetes and deficiencies in health care that leads to necrosis and gangrene, and in the end, the risk of infection and even amputation of the leg to lead. Often wound from bacterial and fungal infection with subsequent issues which the fungal infection in diabetic foot syndrome pathogens plays a major role. Sources for fungal infection in diabetic foot syndrome was rare and often described reports based on a distinctly low prevalence of fungi in the wound.

**Methods:** Sampling with scraping the surface of the foot skin diabetic patients with diabetic foot and between the toes was performed. Gentle shaving surface tissue lesions caught with a scalpel scalpel edge (11) of the wound and the skin of healthy tissue and non shave was caught. The samples were collected on the plate. The comparative study of Hb A1C with fungus isolated from healthy and involvement tissue in diabetic foot ulcer were quickly moved to mycology laboratory.

**Results:** In caught tissue in the context of those with diabetes are 40 percent more likely to have been caught by the fungus, in involved tissue, Aspergillus flavus and healthy tissues, A.fumigatus HbA1C levels were observed in each of amount. Candida glabrata and C. cruise with an increase in HbA1C their presence was more visible, so if incorrect control of sugar, more favorable conditions for the presence of the candidates.

**Conclusion:** The relationship between the fungus and HbA1C was not very strong but in tissue involved HbA1C accounts has grown fungus is more than healthy tissue.

**Keywords:** Hb A1C, Fungus, Involvement tissue

# P583 - 626: INVESTIGATION OF THE DAMAGE ON FUSARIUM OXYSPORUM BY BACILLUS AMYLOLIQUEFACIENSE M13-RW01 METABOLITES USING SCANNING ELECTRON MICROSCOPY

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**Background and Aim:** Bacillus amyloliquefaciense displays a high inhibitory activity against fungal pathogens. The aim of this study was Investigation of the damage on Fusarium oxysporum by Bacillus amyloliquefaciense M13-RW01 metabolites using Scanning Electron Microscopy.

**Methods:** Crude lipopeptides of Bacillus amyloliquefaciense M13-RW01 were extracted with methanol from the precipitate by adding concentrated HCl to culture filtrate. The antifungal effect of metabolites against Fusarium oxysporum were determined by well diffusion. Morphological changes on Fusarium oxysporum cell in the presence of the metabolites were revealed by SEM.

**Results:** According to the results lipopeptide metabolites exhibited antifungal activity against the Fusarium oxysporum. Scanning electron microscopy showed morphological changes on Fusarium oxysporum mycelial and conidia production.

**Conclusion:** Thus, the present study indicates deserving further investigation for clinical applications.

**Keywords:** Bacillus amyloliquefaciens, Metabolite, Fusarium oxysporum, SEM

# P584 - 633: ARAZYME CLONING, EXPRESSION AND BIOLOGICAL ACTIVITY OF SERRATIA PROTEAMACULANS

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**Background and Aim:** Serratia proteomaculans, is a gram negative symbiotic bacterium isolated from the intestine of the spider Nephila clavata. Aranicola proteolyticus secrets a 51.5 KD extracellular metalloprotease called Arazyme which is a metallopeotease with various pharmacologic effects. It used as a treatment for atopic dermatitis, allergie diseases and hepatic injury, the anti- cancer activity of Arazyme was reported too. The present study was designed to obtain the recombinant protein and investigate its cyto-toxic effect in-vitro.

**Methods:** Arazyme gene vector was transferred to the host E.coli BL21 (DE3). Arazyme recombinant gene. Expression of protease gene attached to His-Tag was induced by IPTG, the expressed proteins were isolated and purifed by NI-NAT kit (Qiagen, Inc) and the proteolytic activity of enzyme was determined spectrophotometricaly by using a suitable substrate (casin). Cyto-toxictyof recombinant protease was done on MCF7 cell line MTT assay. The data was analyzed by Graph.Pad prism ver 5.04, and p- value less than 0.05 was considered significantly.

**Results:** Cloning PCR performed for transformasion verfying and the product observed at 1500 bp on agarse gel. Arazyme purified with Ni-NAT ad purification value was mor than 1.9 µg/ml. The Arazym gene expression showed on 52kd on Acrylamide gel. Skim milk assay verfied the Arazyme protein. A dose-dependent manner of Arazym observed on casin assay as a specific subestra of Arazyme. Extracted Arazyme was cytotoxic on MCF7 cell lin, the IC50 value was 25µg/ml.

**Conclusion:** The results showed that the purification of recombinant Arazyme protein could be optimized for pharmacological and theraputic strategies.

**Keywords:** Serratia proteamaculans, breast cancer, MCF7

# P585 - 635: PURIFICATION AND STUDY OF ANTI-CANCER EFFECTS OF SERRATIA MARCESCENS SERRALYSIN

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**Background and Aim:** All Living cells such as bacteria, produce either extracellular or intracellular enzymes. Serralysin is an extracellular metalloprotease from Serratia (S.) marcescens The goal of this study was to extract and purify serralysin and to investigate its anticancer activity in vitro on colorectal cancer cell line.

**Methods:** The presence of the gene encoding serralysin in S. marcescens ATCC 14756 was confirmed by PCR. Proteolytic activity of this enzyme was assessed by skim milk agar and casein assays. Inhibbition of metalloprotease activity was confirmed using 50 mM EDTA. Supernatant of overnight culture of S. marcescens was collected for precipitation of serralysin by ammonium sulfate and subsequently was subjected to ion exchange chromatography. Dialysis was used followed by SDS-PAGE. Cytotoxic activity of serralysin was assessed using MTT assay on Caco-2 cancer cell line.

**Results:** The PCR product relevant to serralysin was observed. The activity of purified serralysin was confirmed by the skim milk assay and casein assay. MTT assay showed acceptable results on Caco-2 cancer cell line.

**Conclusion:** Our results showed that native serralysin has potential anticancer effect and may be a candidate for further pharmaceutical research and development. Extensive in vivo and mechanistic in vitro studies are suggested to confirm the enzyme's biological activities.

**Keywords:** Serralysin, S. marcescens, Colon cancer

# P586 - 640: CORTISONE PROTECTS LYSOSOMAL DAMAGE IN ENDOTOXIN-INDUCED SHOCK IN WISTAR RATS

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**Background and Aim:** Lysosome, a cytoplasmic organelle present in animal tissues, contains hydrolytic enzymes capable of degrading various cellular constituents. Endotoxin shock is frequently associated with multiple organ failures, resulting from inducing lysosomal enzyme leakage. In the study investigated the association of endotoxin shock with serum and hepatic beta-glucuronidase activity and protective effect of glucocorticoids drugs on lysosomal damage.

**Methods:** In this study, 30 rats were equally divided to control, tolerance and endotoxin groups. The control group received a normal saline, the tolerance group (Cortisone acetate, 12.5 mg/kg 3 days, IM, and on the 4th day, injection of hydrocortisone 21-sodium hemisuccinate, 12.5 mg/kg, IV, after 1 hour 2.5 mg/kg, IV, Salmonella endotoxin), the endotoxin group (2.5 mg/kg, IV, Salmonella endotoxin). Partially purification and determine beta-glucuronidase activity were with using of gel filtration (Sephadex G 75), Ion exchange (DEAE cellulose) chromatography and Fishman method.

**Results:** The results showed a significant increase in serum and liver levels beta-glucuronidase activity in endotoxin group compared with the other groups ($p<0.05$). The other hand, we found most decreased the enzyme activity in the tolerance group. Also, in all steps of purification enzyme specify activity in endotoxin group was more than the other groups.

**Conclusion:** Stress plays an important role in the deterioration of cells accompanied by induction of lysosomal enzymes release into the cell. Also, suggest that protection of these particles by injection of glucocorticoid drugs can a significant resistance to endotoxin induced stress.

**Keywords:** Stress, endotoxin shock, glucocorticoid drugs, lysosomes, beta-glucuronidase

# P587 - 661: NOSTOC CYANOBACTERIA SPECIES –A NEW AND RICH SOURCE OF NOVEL BIOACTIVE COMPOUNDS WITH PHARMACEUTICAL POTENTIAL

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**Background and Aim:** Nostoc species are inimitable phyla that grow in competitive niches and, as a result, are favorable sources of bioactive compounds.

**Methods:** The cyanobacteria and predominantly the genus Nostoc are known as producers of dozens pharmacologically active compounds, composed of abnormal amino acids. Their function as antiviral, anti-tumour, antibacterial, anti-HIV and a food additive have been well set up.

**Results:** This high degree of chemical diversity in secondary metabolites of cyanobacterial Nostoc species may thus create a prolific source of new entities leading to the development of new pharmaceuticals.

**Conclusion:** This review provide the comprehensive overview of metabolites and novel bioactive natural products produced by cyanobacteria of the genus Nostoc, which present biological activity and can be used for the treatment of various human and animal disorders.

**Keywords:** Novel bioactive compound, Nostoc species, pharmaceutical potential

# P588 - 671: STUDY ON FUNGI ACTIVE IN BIODETERIORATION OF ANCIENT BOOKS AT THE NATIONAL LIBRARY OF IRAN USING CULTURE METHODS

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**Background and Aim:** This descriptive, cross – sectional, prospective study was performed in the. In this study, 50 randomly selected manuscripts including un-identified books, consolidated books, papers and papyrus, were collected from different parts of the library. Some of the selected manuscripts were more than 1000 years old. At first, books were visually inspected for mould growth or any damage. The pages were scraped by sterile scalpels or swabs and wetmount prepared by 10% potassium hydroxide and directly examined by low power, for detection of hyphae or conidia. Culture of swabs or scrapings was performed on Sabourod Dextrose Agar containing Chloramphenicole media in order to isolate fungal contaminants. Complementary tests (slide culture, etc.) were performed for distinguishing the genera of the fungi (Samson et al. 2002).

**Methods:** Direct microscopic examination and culture.

**Results:** Table I shows frequency and percentages of manuscripts revealed fungal contamination bymacroscopic, microscopic examination and culture in National Library of Iran during this study.Among contaminated books, 47 manuscripts(95.%) were contaminated by Filamentous fungi, and yeastfungi were detected on 3 cases (4.8%). Table II is alisting of fungi isolated from library materials during this study.The results in Table I indicated that Penicillium (29%) Aspergillus spp., (25%), Alternariaspp (19%), Cladosporium (7%), Chaetomiumspp (5%), Ulocladium (5%), Aeorobasidium (4%) and unknown spp (6%) were the maincontaminating molds of all tested manuscripts and accountfor two third of contaminations.

**Conclusion:** In conclusion, molds, especially Aspergillus, PenicilliumandChaetomiumare the most common fungi, which destroy thebooks if they are kept in bad conditions.Culture is a reliablemethod for detecting the opportunistic fungus. Acknowledgments.We thank the National Library of Iran for providing samples of old book of this research.

**Keywords:** Fungal contamination, Library, Books, Aspergillus, PenicilliumAlternaria, Chaetomium

# P589 - 678: ANTIMICROBIAL EFFECTS OF ETHANOL EXTRACT OF PLANT EUPHORBIA SP ON STAPHYLOCOCCUS AUREUS AND ACINETOBACTER BAUMANNII IN VITRO

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**Background and Aim:** Acquiring infectious diseases due to resistant infectious agents leads to serious problems such as taking higher doses of antibiotics, additional treatments, lengthened hospital stay, and imposing additional costs. This study was designed to determine the antimicrobial efficacy of the hydroalcoholic extracts of Euphorbia sp. against different kinds of bacterial viz. Staphylococcus aureus and Acinetobacter baumannii

**Methods:** Hydro alcoholic extract of two medicinal plants collected from The scope of Chaharmahal va Bakhtiari; the hydroalcoholic extracts of the plants were prepared by maceration, then The MIC values and MBC of the Euphorbia sp extracts against the bacterial strains( A. baumannii PTCC 1855, S. aureos ATCC 25923 ) were determined by a micro broth dilution method based on instructions CLSI.

**Results:** The MIC value for the hydro alcoholic extract of Euphorbia sp was 2 mg/ml for S. aureos and 0.5 mg/ml for A. baumannii. The MBC value of the ethanol extract of Euphorbia sp was 8 mg/ml for S. aureos and 8 mg/ml for A. baumannii.

**Conclusion:** According to antibacterial effects of alcoholic extracts, The best inhibitory effect on A. baumannii for Euphorbia sp and This plant that the recently identified species can serve as suitable choices to produce antibiotics to fight treatment-resistant bacteria

**Keywords:** Antimicrobial effects, Euphorbia sp, Staphylococcus aureus, Acinetobacter baumannii

# P590 - 701: SOME CHARACTERIZATION OF ENTROAGGRIGATIVE ESCHERICHIA COLI STRAINS ISOLATED FROM DIARRHEA SAMPLES OF CHILDREN IN AHVAZ

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**Background and Aim:** Enteroaggregative Escherichia coli (EAEC) is a pathotype of E. coli associated with acute and chronic diarrhea in both the developed and developing countries. The pathogenesis mechanism of EAEC involves damaging of host cells and induction of inflammation due to the aggregation and adherence of the bacteria to the intestinal mucosal cells those results in diarrhea. The goal of study was investigation of some phenotypic and genotypic characterization of EAEC isolates from children with diarrhea in Ahvaz, Iran.

**Methods:** EAEC strains were identified using aggR and pcvD genes which are specific for this pathotype. Thirty six EAEC strains were detected and examined for aap and pet genes by polymerase chain reaction; also biofilm production was assayed in isolates.

**Results:** The aap gene was present in (86/1%) of isolates . (5/5% )of strains had the pet gene and the (75%) of isolates showed biofilm production.

**Conclusion:** Aap gene encoded dispersin, an antigenic antiaggregative protein that facilitates penetration and colonization of bacteria. High prevalence of these phenotypic and genotypic characterizations could be indicate specific virulence properties of this pathotype.

**Keywords:** Enteroaggregative Escherichia coli, diarrhea, aggregation

# P591 - 736: MOLECULAR INVESTIGATION OF HELICOBACTER PYLORI INFECTION AND RELATION WITH FTO RS9939609 POLYMORPHISM IN TYPE 2 DIABETES

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**Background and Aim:** Helicobacter pylori plays an important role in distortion of glucose and develops type 2 diabetes, insulin resistance. Recent studies have further shown the effects of the FTO gene on the risk of BMI-related outcomes such as diabetes. we performed a case-control study to assess the association of FTO rs9939609 polymorphism and Helicobacter pylori infection with type 2 diabetes in Iranian population.

**Methods:** In this case-control study, 345 patients with type 2 diabetes and 408 healthy controls were studied. The DNA extracted from blood specimens was amplified by H pylori cagA specific primers. The FTO rs9939609 polymorphism genotyping were detected by ARMS PCR.

**Results:** The results show that H. pylori cagA positivity was detected in 54.20% of the diabetic patients and in 24.01% of the control group. We observed a significant association between the genetic polymorphism rs9939609 and diabetes risk. Compared with the common genotype TT, individuals carrying AA had a significantly increased risk, with an OR of 4.5. Furthermore, FTO rs9939609 AA genotype were strongly associated with H pylori cagA(+) samples when compared with cagA(-) samples.

**Conclusion:** In general it can be concluded that molecular analysis of FTO rs9939609 AA genotype is important in early detection and treatment of type 2 diabetes with H pylori cagA(+) infection. The FTO polymorphism rs9939609 is associated with a risk of type 2 diabetes with H pylori cagA(+) infection in the Iranian population.

**Keywords:** Type 2 diabetes, FTO rs9939609 polymorphism, Helicobacter pylori

# P592 - 737: ASSOCIATION OF MBL RS1800450 AND TNF A RS1800620 POLYMORPHISM WITH HELICOBACTER PYLORI IN TYPE II DIABETES MELLITUS

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**Background and Aim:** Type II diabetes mellitus (T2DM) is the prevalent type of diabetes including 90% of the cases in the world and Helicobacter pylori (H. pylori) plays a pathogenic role in development of T2DM. Here it is investigate the prevalence rate of H. pylori infection and its relation with MBL rs1800450 and TNF α rs1800620 polymorphism in T2DM.

**Methods:** In this case-control study, 174 patients with type II diabetes and 185 healthy controls were studied. Also, demographics, physical and biochemical parameters were performed in all patients. The DNA extracted from blood specimens was amplified by H pylori cagA specific primers. The MBL rs1800450 and TNF α rs1800620 genotyping were detected by ARMS PCR.

**Results:** The results show that H. pylori cagA positivity was detected in 42.82% of the diabetic patients and in 22.16% of the control group and H. pylori infection was closely correlated with MBL rs1800450 AA genotype and TNF α rs1800620 GG genotype when compared with healthy controls. Furthermore, these two genotypes were strongly associated with H pylori cagA(+) samples when compared with cagA(-) samples. Additionally, the presence of H pylori cagA(+) infection was significantly associated with the elevated serum levels of total cholesterol and low density lipoprotein (LDL) cholesterol.

**Conclusion:** In general it can be concluded that molecular analysis of MBL rs1800450 AA genotype and TNF α rs1800620 AA genotype are important in early detection and treatment of T2DM with H pylori cagA(+) infection.

**Keywords:** Type II diabetes mellitus (T2DM), MBL rs1800450, TNF α rs1800620, H pylori

# P593 - 771: ISOLATION AND MOLECULAR CHARACTERIZATION OF CHOLESTEROL OXIDASE FROM BREVIBACTERIUM SPECIES

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**Background and Aim:** Cholesterol oxidase (CHO) has wide applications in medicine, agriculture, industry, and pharmaceutical purposes. CHO have been produced from several bacteria, including members of the genera Arthrobacter, Rhodococcus, Pseudomonas, Brevibacterium, Nocardia, Schizophylum, Corynebacterium and Streptomyces. In this study, characterizations of isolated strains from soil, optimum temperature and pH conditions for CHO production were described.

**Methods:** Ninety (90) samples of soil were collected from different parts of Lorestan province. The samples were cultivated in a screening and optimized medium to isolate CHO-producing bacteria. Confirmatory tests and assessment of enzyme activity were evaluated on isolated bacteria. The l6srRNA sequence of strains was amplified by PCR using universally conserved primers and the appropriate strain was selected. Then, the biochemical and microbiological tests of the appropriate strain were determined in order to identify their properties. Finally, to determine optimum temperature and optimum pH of CHO-producing bacteria, extracellular CHO activity was assessed under different temperature and pH.

**Results:** According to the morphological, cultural and biochemical tests, the isolated bacterium was identified as Brevibacillus DCY35. Results showed that optimum temperature and pH for CHO activity were 30°C and 7.4, respectively. Alignment of nucleotide sequence of CHO gene showed 99% homology with other bacterial CHO genes. Brevibacillus DCY35 produced significant levels of extracellular CHO in an optimized medium.

**Conclusion:** Brevibacillus DCY35 strain is potential source of CHO production and can be used in clinical and research purposes.

**Keywords:** Brevibacillus, Cholesterol oxidase, Soil

# P594 - 807: IN VITRO ASSESSMENT OF ANTIOXIDANT AND ANTIBACTERIAL ACTIVITIES OF METHANOLIC EXTRACT OF LEAVES OF PORTULACA OLERACEA L.

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**Background and Aim:** Plants have been a source of medicine for thousands of years, and phytochemicals continue to play an essential role in medicine. In the present study, in vitro antioxidant, antibacterial activity of methanolic extract of Portulaca oleracea L.

**Methods:** In this work, the leaves of Portulaca oleracea L. were collected from Tonekabon, Iran and methanolic extract prepared by microwave assisted extraction (MAE) method. Then total flavonoids and total phenolic content of methanolic extracts were determined by the Aluminium Chloride Colorimetric and Folin-Ciocalteau method, respectivly. Also, in vitro antioxidant activity of methanolic extracts were assayed by 1,1-diphenyl-2-picrylhydrazyl (DPPH) free radical scavenging method of Blois. and antibacterial effect of Portulaca oleracea L. extracts was evaluated against several pathogenic bacteria associated with human infections viz. Escherichia coli (PTCC 1399), Pseudomonas aeruginosa (PTCC 1599), Staphylococcus aureus (PTCC 1113), and Shigella dysenteriae (PTCC 1188) by minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) method.

**Results:** Our data showed total phenolic content of methanolic extracts of Portulaca oleracea L. leaves was 120.6±0.02 mg GAE/g dry plant material. Also, total flavonoid content of methanolic extracts was 87.2±0.1 mg QE/g dry plant material. The value IC50 of methanolic extract determined 0.3564 mg/ml IC50 of ascorbic acid was 0.0116 mg/ml. Also, the methanolic extract of leaves of Portulaca oleracea L. exhibited good antibacterial potential against gram positive and gram negative bacterial strains.

**Conclusion:** Therefore, these findings reveal the potential use of Portulaca oleracea L. to treat infectious diseases, which are being caused by microorganisms.

**Keywords:** Portulaca oleracea L., MIC, MBC, DPPH, Infectious diseases

# P595 - 831: DETECTION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS ISOLATED FROM BURN PATIENTS

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**Background and Aim:** Staphylococcus aureus is known to be a major pathogenetic agent in the hospital. Recently, the important role of Staphylococcus aureus in the development of hospital infections and the community has led to an increase in research on this bacterium. This study describes the Detection of methicillin-resistant Staphylococcus aureus isolated from burn patients.

**Methods:** During 6-month study, 100 strains of MRSA were obtained from burn patients. Biochemical tests were used to identify isolated MRSA. An antibiotic susceptibility test was performed using disc diffusion method and the presence of the gene coding for mecA was confirmed by PCR method. Also, different types of SCCmec were performed using Multiplex PCR.

**Results:** All isolates of MRSA strains are resistant to amoxicillin and penicillin and are susceptible to Vancomycin. Resistance to other antibiotics was different from 73.2% for amikacin to 15.5% for synerses. MDR was observed in all strains. Two types of SCCmec were detected in 71.4% of type III and 28.6% of type IV, based on multiplex PCR.

**Conclusion:** The results showed that there was a relatively high incidence of SCCmec III in the burn center. All strains were resistant to penicillin and amoxicillin. These study required further studies on antibiotic resistance, so description the distribution of SCCmec types among MRSA isolated from burn patients.

**Keywords:** SCCmec type, MRSA, burn patient

# P596 - 833: ANTIBACTERIAL RESISTANCE AMONG METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS RECOVERED FROM INTENSIVE CARE UNIT (ICU) IN TEHRAN

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**Background and Aim:**S taphylococcus aureus is one of the important factors in the development of hospital and community infections. Since the bacterium has a flexibility genome, strains are resistant to the drug. in this study we Determined The prevalence of antibacterial resistance among different types of SCCmec of methicillin-resistant Staphylococcus aureus from ICU in Tehran.

**Methods:** In this study conducted from bahman 1395 to khordad 1396, 100 strains of MRSA from different clinical samples isolated from patients admitted to intensive care units were studied. The disk diffusion method was used to determine the resistance pattern.

**Results:** Antibiotic susceptibility testing showed that all strains were susceptible to Vancomycin. The frequency of MRSA resistance to mupirocin was 5%. among MRSA strains SCCmec type III 50.5% was reported.

**Conclusion:** Today Methicillin is used to treatment Staphylococcus aureus infections. Unfortunately, with the rapid emergence of methicillin-resistant strains, this type of antibiotic has also lost its effectiveness. Therefore, in order to cope with the strains of this bacterium, epidemiological studies and understanding of the distribution and spread of this bacterium seem to be important.

**Keywords:** Staphylococcus aureus, MRSA, Multidrug-Resistant, Intensive Care Unit

# P597 - 859: EVALUATING THE PREVALENCE OF BRUCELLOSIS BY ELISA AND WRIGHT METHODS IN PATIENTS REFERRING TO TABRIZ 29 BAHMAN HOSPITAL IN SUMMER 2014

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**Background and Aim:** In our country, Wright test is used to detect brucellosis. Due to the low sensitivity of this test, false negative cases are reported. In this study, the results of Wright and ELISA tests were compared in suspected cases of brucellosis.

**Methods:** The results of Rapid test and Wright Tube test and determination of IgG, IgM classes against Brucella were evaluated by ELISA method.

**Results:** Of the 304 suspected cases in the control group, 134 (44.1%) were male and 170 (55.9%) were women. In this study, using rapid Wright test, 304 samples from the control group comprised 193 patients (63.5%), Negative Brucellosis was reported And 111 Sample were positive in the control group (36.5%). Also, using a Wright Tube test, 189 patients (62.2%) were reported negative for brucellosis and 115 patients (37.8%) were positive. For all people in addition to the Wright test, Antibody Tests, Against Brucella, IgG and IgM classes were performed. In this study, using IgG test for screening 304 samples from the control group, 185 patients (60.9%) Negative Brucellosis was reported. In this study, using IgM for screening 304 samples, 261 patients (85.9%) Negative Brucellosis was reported.

**Conclusion:** Due to the lack of compatibility of the results of Wright and ELISA tests and with regard to availability, High sensitivity and determining the type of antibody class in the ELISA method. This method emphasizes the diagnosis of brucellosis.

**Keywords:** Brucellosis, Wright, Elisa

# P598 - 864: EVALUATING THE PREVALENCE OF BRUCELLOSIS DISEASE BY ELISA AND WRIGHT TEST IN PATIENTS REFERRED OSTAD ALINASAB HOSPITAL IN TABRIZ

Yashar Bagherizadeh [1], Abolfazl Jafari-Sales[2], Farnaz Rasi-Bonab[3], Samin Alipoor-Dolatabad[4], Mahboubeh Abdoli-Seuejani[5]

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**Background and Aim:** In our country, Wright test is used to detect brucellosis. Due to the low sensitivity of this test, false negative cases are reported. In this study, the results of Wright and ELISA tests were compared in suspected cases of brucellosis.

**Methods:** The results of Rapid test and Wright Tube test and determination of IgG, IgM classes against Brucella were evaluated by ELISA method.

**Results:** Of the 289 suspected cases in the control group, 126 (44.1%) were male and 163 (55.9%) were women. In this study, using rapid Wright test, 289 samples from the control group comprised 175 patients (63.5%) , Negative Brucellosis was reported And 114 Sample were positive in the control group (36.5%). Also, using a Wright Tube test, 163 patients (62.2%) were reported negative for brucellosis and 126 patients (37.8%) were positive. For all people in addition to the Wright test, Antibody Tests, Against Brucella, IgG and IgM classes were performed. In this study, using IgG test for screening 304 samples from the control group, 157 patients (60.9%) Negative Brucellosis was reported. In this study, using IgM for screening 289 samples, 227 patients (85.9%) Negative Brucellosis was reported.

**Conclusion:** Due to the lack of compatibility of the results of Wright and ELISA tests and with regard to availability, High sensitivity and determining the type of antibody class in the ELISA method. This method emphasizes the diagnosis of brucellosis.

**Keywords:** Brucellosis, Wright, Elisa

# P599 - 889: STUDY OF APOPTOSIS INDUCING EFFECTS BY LISTERIA MONOCYTOGENES IN PANCREATIC CANCER CELL LINES WITH MEASURING BCL-2 GENE EXPRESSION VIA REAL TIME PCR

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**Background and Aim:** Pancreatic cancer is one of the malignant cancers of the gastrointestinal tract that has a few prognosis. This fact detects the need for new therapies that can cure this cancer. Using bacteria to treat cancer can be a useful therapeutic approach. Bacterial toxins can kill cells by inducing apoptosis. Listeria monocytogenes secretes a hemolysin called listeriolysin O, which induces apoptosis in several immune and non-immune cell type. Bcl-2 gene is an essential gene regulating apoptosis. Bcl-2 is an anti-apoptotic protein and expected to be high when cancer occurs. The aim of this study was to determine the apoptosis effect of Listeria monocytogenes on AspC-1 pancreatic cancer cell lines.

**Methods:** The standard strain of L. monocytogenes was cultured in Blood agar medium. Then bacteria were transferred on BHI broth. So bacterial protein was extracted by sonication. Pancreatic cancer cell lines AspC-1 were cultured in RPMI medium. The cancer cells were treated by different doses of bacterial protein. After incubation, RNA was extracted from treated and untreated cells. The Bcl-2 gene expression was quantified by Real-Time PCR.

**Results:** The results showed that protein of L.monocytogenes has dose-dependent anti-cancer effect on AspC-1 cancer cell line. Hence, the most cells were death by increasing bacterial protein. In fact, in treated samples Bcl-2 gene was not expressed.

**Conclusion:** Considering the possibility of using bacteria to treat cancer, proteins of L.monocytogenes can be used to treat pancreatic cancer due to having apoptotic properties.

**Keywords:** Pancreatic cancer, AspC-1, Listeria monocytogenes, Bcl-2 gene

# P600 - 901: EVALUATION OF VIRULENCE MARKERS IN PSEUDOMONAS AERUGINOSA ISOLATES FROM INFECTED PATIENTS

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**Background and Aim:** Pseudomonas aeruginosa is a bacterium responsible for severe infections. The virulence factors play an important role in the colonization, the survival and the invasion of the bacteria. The aim of this study was to detect the virulence-encoded genes among P.aeruginosa isolated from various types of human infections.

**Methods:** From February 2017 to June 2017, a total of 44 P.aeruginosa isolates were collected from patients with different infections ( wound secretion, urinary tract infection, blood and abdominal infections). Isolates were identified by biochemical tests and further confirmed by species-specific polymerase chain reaction. Five virulence genes (lasB, exoS, toxA, plcH, plcN) were screened by multiplex PCR.

**Results:** Of the 44 isolates analyzed, 41 isolates ( 93.18%), 37 isolates ( 84.09%) and 33 isolates ( 75%) were positive for plcH, lasB and plcN, respectively. The gene exoS was found in 16 isolates (36.36%) and only 4 isolates( 9.09%) have toxA. The most predominant profile of virulence genes among these isolates regardless of the type of infection, was plcH, plcN and lasB. Two isolates from urinary tract infections and two isolates from blood cultures have all 5 virulence genes.

**Conclusion:** The presence of high rate of virulence factors among P. aeruginosa isolates is an alarm for public health. Associating virulence profile and infection clinical outcome could be useful for setting up valuable preventive and therapeutic procedures in patients with P. aeruginosa positive cultures.

**Keywords:** Pseudomonas aeruginosa, Multiplex PCR, Virulence genes

# P601 - 902: VIRULENCE GENES OF THE PSEUDOMONAS AERUGINOSA ASSOCIATED WITH BOVINE MASTITIS

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**Background and Aim:** Pseudomonas aeruginosa is a Gram-negative bacterium of environmental origin considered an essentially opportunistic pathogen. P.aeruginosa is occasionally involved in outbreaks of mastitis in bovine species. While many studies have been carried out on P. aeruginosa strains from human infections, few data are available on isolates from animal infections. The aim of this study was to investigate the pathogenicity of P. aeruginosa isolates from bovine mastitis based on the presence of five virulence genes.

**Methods:** A total of 45 isolates from bovine mastitis were confirmed by PCR assay targeting PA-16S rRNA gene specific for P. aeruginosa species. Distribution of five virulence genes (plcN, plcH, lasB, exoS, toxA) were detected among isolates by using multiplex-PCR.

**Results:** PlcN was present in all 45 isolates ( 100%), 44 isolates ( 97/78%) were positive for lasB, 41isolates ( 91/11%) had plcH gene, 2 isolates ( 4/45%) were positive for toxA gene. All isolates were negative for exoS.

**Conclusion:** The genes encoding phospholipases C, including plcN and plcH and also a zinc metalloprotease called lasB play a major role in the pathogenesis of P. aeruginosa isolates from bovine mastitis.

**Keywords:** Pseudomonas aeruginosa, multiplex PCR, Virulence genes

# P602 - 919: THE INHIBITORY EFFECT OF THE FUNGAL ENDOPHYTE AUROBASIDIUM ON THE PATHOGEN ASPERGILLUS NIGER

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**Background and Aim:** In recent years, increased use of chemical antimicrobial drugs has led to drug resistance in human pathogens. Secondary metabolites of fungal endophytes would be a solution to this problem. In addition to improving the life conditions of their hosts, these metabolites possess invaluable antimicrobial properties and, thus, they could be used as new sources of pharmacological compositions. In fact, the metabolites enable fungi to occupy their host organism by overcoming its defense system through their specific chemical structure.

**Methods:** The aim was to study the effect of the active substances produced by the endophytes of the trees of Cupressaceae family against the pathogen Aspergillus niger. Aurobasidium, an endophyte isolated from Cupressus sempervirens var. cereiformis in Fars province, Iran, was put to a bi-culture test with A. niger. After the culture, the plates were inserted for three days into incubator in a temperature of 25±2. After 3 and 7 days, i.e. when the control fungus had covered the surface of the plate, the daily growth rate of A. niger as well as the inhibitory effect of the endophyte was measured. This test was conducted with two repetitions, each repetition containing two treatments. The data were analyzed in SPSS with a random design.

**Results:** The bi-culture of Aurobasidium and A. niger in 3 and 7 days indicated 37% and 53% of inhibition by Aurobasidium, respectively.

**Conclusion:** The experiment shows that the fungal endophytes of the Cupressaceae family produce secondary metabolites which possess bioactive properties for inhibiting the growth of pathogens.

**Keywords:** Secondary metabolite, Endophyte, Cupressaceae family, Aspergillus niger, Aurobasidium.

# P603 - 920: ISOLATION AND IDENTIFICATION ANTIBIOTICES PRODUCING ACTINOMYCES FROM BUSHEHR

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**Background and Aim:** Actinomycetes are the dominant group of soil microflora together with bacteria and fungi. They are Gram-positive bacteria with high G + C (> 55%) content in their DNA . they originally considered as intermediate group between bacteria and fungi. They are free living, saprophytic bacteria, and a major source of production of Antibiotics (Mohan Remya). Actinomycetes are economically and biochemically valuable prokaryotes that are able to produce a wide range of active bioactive compounds such as anti-tumor agents, immunosuppressive agents, enzymes and antibiotic (Valli S).

**Methods:** Then, under sterile conditions, the samples were chopped and suspensions were prepared. The suspensions were cultured on a yeast extract and malt extract, casein agar starch, ISP3, ISP4, ISP5, ISP6 and ISP7.

**Results:** After examining the production of antibiotics, five strains of the isolates were from the sponge producing antibiotics

**Conclusion:** The study, shown in the Marine Invertebrates, is a habitat for single-celled organisms, sponges are rich sources of bioactive compounds

**Keywords:** Actinomyces, antibiotics, Over layer

# P604 - 921: ISOLATION AND IDENTIFICATION ANTIBIOTICES PRODUCING ACTINOMYCES FROM BUSHEHR COASTAL SPONGES

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**Background and Aim:** Actinomycetes are the dominant group of soil populations together with bacteria and fungi. They are Gram-positive bacteria with high G + C (> 55%) content in their DNA and they originally considered as intermediate group between bacteria and fungi. They are free living, saprophytic bacteria, and a major source of production of Antibiotics (Mohan Remya). Actinomycetes are economically and biochemically valuable prokaryotes that are able to produce a wide range of active bioactive compounds such as anti-tumor agents, immunosuppressive agents, enzymes and antibiotic (Valli S).

**Methods:** To isolate actinomycetes from sponge macroorganism samples, the surface of the samples was first disinfected. Then, under sterile conditions, the samples were chopped and suspensions were prepared. The suspensions were cultured on a yeast extract and malt extract, casein agar starch, ISP3, ISP4, ISP5, ISP6 and ISP7.

**Results:** After examining the production of antibiotics, five strains of the isolates were from the sponge producing antibiotics.

**Conclusion:** The study, shown in the Marine Invertebrates, is a habitat for single-celled organisms, sponges are rich sources of bioactive compounds.

**Keywords:** Sponge, Actinomycetes, saprophytic

# P605 - 937: EVALUATION OF SOME EPIDEMIOLOGICAL FACTORS IN CHOLERA PATIENTS WERE REFERRED TO HEALTH CARE CENTER OF KHORASAN RAZAVI PROVINCE FROM 2002 TO 2012

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**Background and Aim:** Cholera is an old disease which has been around for a long time. It is a serious disease due to the very large fatality. Vibrio bacteria lives in water in a non- active form and becomes active as soon as proper conditions like high temperature, sun light, adequate salt and generally whatever that makes a suitable growth environment are provided. Among different types of cholera, only O1 and O139 serogroups are able to cause disease and epidemic state. One of the cholera symptoms is diarrhea without any pain and with large amount. Severe dehydration leading to death, cause by this disease shows its importance.

**Methods:** This study is descriptive cross sectional .Total patients with cholera were 197 cases that were referred to health care center of Khorasan Razavi Province from 2002 to 2012.

**Results:** From 197 patients 44.2% were females and 55.8% were males.94.9 % of patients were infected in summer. Most of the cases were in the second decade of life(22.8%) and 61.4% of cases were live in village.43.1% of them had blood group O and 16.2% of patients had blood group AB(the lowest level).The most common way of getting disease is contaminated water (58.4%).Most patients had self employed occupation (31.9%).

**Conclusion:** Thaking into account the large number of cholera in summer and villagers it is recommended that proper educations on cholera, how it spread and can be treated. Drinking water should be monitored more aggressively to avoid the spread of cholera.

**Keywords:** Vibrio Cholera, Epidemiology, Diarrhea

# P606 - 956: USE OF THYME IN REDUCING PATHOGENICITY OF AFLATOXINS IN HUMANS

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**Background and Aim:** Aflatoxins are a group of highly toxic, cancer-causing produced by Aspergillus flavus and Aspergillus parasiticus. Epidemiological studies have shown an association between AFB1 exposure and lung cancer in humans. The aim of this study was to evaluate the Thyme application in reducing pathogenicity of Aflatoxins in humans.

**Methods:** This study is a review and the findings of its obtained of the collected findings by researchers who have explored in this field.

**Results:** Razzaghi-Abyaneh et al demonstrated the essential oil of Thymus vulgaris (thyme) inhibit both A. parasiticus and AF production. The research findings Abdel All et al showed Thyme oil completely effective in preventing aflatoxigenic Aspergilli growth on the surface of Ras Cheese after sinking it in Thyme oil during three months of storage period of ripening. In Karbin et al study was seen the essence of Thyme inhibited the growth of Aspergillus flavus. Segvić Klarić et al found the thyme essential oil possesses a wide range of fungicidal activity on Aspergillus. Research Rasooli and Owlia showed static effects of the essential oils from Thymus eriocalyx and Thymus X-porlock against A. parasiticus were at 250 ppm and lethal effects were 500 and 1000 ppm, respectively. Aflatoxin production was inhibited at 250 ppm of thyme oils. Manafi et al found that incorporation of 500ppm Thyme essence could partially restore the negative impact of aflatoxin in commercial broilers.

**Conclusion:** These results indicate that the EOs of some medicinal plants may be considered as potential candidates to protect foods and reduced pathogenicity of Aflatoxins in humans.

**Keywords:** Thyme, pathogenicity, Aflatoxins

# P607 - 1030: SURVEY ON THE PREVALENCE OF TUBERCULOSIS IN BOOALI HOSPITAL IN ZAHEDAN FROM THE BEGINNING OF THE 92ND OF JULY TO 95TH

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**Background and Aim:** Tuberculosis is an infectious disease that is the most commonly infectious cause of adult infectious diseases. This study was conducted to determine the prevalence of tuberculosis and sex in affected patients, as well as the outcome of patients with mucous membranes in Shahrzahadan during the period of 92 to 95 July in Bouali hospital.

**Methods:** This cross-sectional descriptive study was carried out on 1,000 people from booali hospital in Zahedan from 92 to 95 July. Data from the hospital were collected and analyzed using the SPSS software.

**Results:** A total of 1,000 people were from 840 individuals with intra-pulmonary tuberculosis and 160 pulmonary tonsils. Out of 840 tuberculosis cases Intra-pulmonary neoplasms of 235 patients were negative and 605 were reported. Patients with extra pulmonary tuberculosis were 98 patients and 62 were men. Also, 370 patients and 235 male were infected with intra-pulmonary tuberculosis. Also, patients with intra-pulmonary tuberculosis, smear 130 Women and 105 men report.

**Conclusion:** The ratio of Pulmonary Pulmonary Pulmonary Pulmonary Tumor to the total 60.55 TB cases, which is consistent with the 165 Index of National Cancer Control Program.

**Keywords:** Spss, pulmonary, out pulmonary, intra-pulmonary tuberculosis

# P608 - 1108: INHIBITORY EFFECT OF HALOBACTERIUM SALINARUM METABOLITE ON PROSTATE CANCER CELL LINES

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**Background and Aim:** Because of their short life span, microorganisms are known as the easy producers of natural products. Although, some carotenoids from halophile archaeal strains have been exhibited cytotoxic activity against some cancer cell lines, but it seems that studying of cytotoxic effects of their metabolites would be a well approach.

**Methods:** A total of 10 metabolites of archaeal strains from saline environments of Iran have been evaluated for their anticancer potential against five human cancer cell lines of breast, lung and prostate and a fibroblast cell line as the control. Downstream analysis of one of the most potent metabolite was done using various assays to test the effect of this metabolite on cancer stem cells including sphere, invasion and migration assay. Furthermore, in vivo studies on nude mice had been done for evaluating the effect of this metabolite.

**Results:**Among these 10 strains, 3 metabolites were found to be cytotoxic against one or more cancer cell lines after 48 h with cell line specific activities. The metabolite from Halobacterium salinarum had the potent cytotoxic effect on prostate cancer cell lines with IC50 of 0.5 mg/ml and lowered the size and number of sphere of the cell lines with no effect on their migration and invasion. It had a remarkable effect in reducing the size of tumors of human cell lines in nude mice.

**Conclusion:** Altogether, Halobacterium salinarum's metabolite had a potent cytotoxic effect on prostate cancer cell lines. This study is the first report regarding the anti-cancer potential of metabolites from halophilic archaeal species.

**Keywords:** Cancer, Halophile, Archaeon

# P609 - 1116: EFFECT OF METABOLITES FROM NATIVE HALOPHILIC STRAINS AGAINST METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Methicillin-resistant Staphylococcus aureus (MRSA) infections and how they evade treatment with antibiotics have been under investigation for years following deadly outbreaks. Metabolites from halophiles would be a suitable source for bioactive molecules against MRSA.

**Methods:** A total of 10 metabolites from microorganisms isolated from different saline environments of Iran have been evaluated for their antibacterial potential against MRSA, in different concentrations from 0 to 1 mg/ml. Diameter of bacterial growth inhibition had been measured in presence of different metabolites.

**Results:** Four of examined metabolites had been found as MRSA growth inhibitors after 48 hours of treatment. They were from Pseudomonas salegens, Koucoria marina sp. MA2, Salinicoccus roseus sp. AV2 and Haloarchaeobius iranensis with the effective concentration of 1, 0.5, 1 and 1 mg/ml, respectively.

**Conclusion:** Altogether, this study offers novel findings regarding the antibacterial potential of several halophilic bacterial species inhabiting the saline environments of Iran against MRSA, and this revealed that these microorganisms are appropriate choices for finding new antibiotics.

**Keywords:** Halophile, Antibiotic, Methicillin-Resistant Staphylococcus aureus

Microbial Vaccines

## P610 - 16: : EVALUATION OF SOME FACTORS ASSOCIATED TO BACILLI CALMETTE-GUERIN (BCG) LYMPHADENITIS IN VACCINATED INFANTS IN RAZAVI KHORASAN PROVINCE FROM 2009 TO 2013

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**Background and Aim:** BCG vaccination is performed as a part of expanded program of immunization. Lymphadenitis is the most common complication of BCG vaccination. The aim of this study was to evaluation of some factors associated to BCG lymphadenitis in vaccinated infants in Razavi Khorasan Province.

**Methods:** In this retrospective study, 2560 infants with BCG lymphadenitis were evaluated.

**Results:** Average annual incidence of BCG lymphadenitis in this study was 4.6 per 1000 vaccinations. The prevalence of BCG lymphadenitis was higher in male (57%) and positive correlation between occurrence of BCG lymphadenitis and the infant sex was found. (P-value 0/0001) No positive correlation between occurrence of BCG lymphadenitis and birth weight < 2500 gram was found. (p- Value 0/089) The most cases (77.8%) were appeared within 6 months and few cases (6%) developed after 12 months. The majority of cases with lymphadenitis were in group with gestational age > 37 weeks.

**Conclusion:** Annual incidence of BCG lymphadenitis in this study was 4.6 per 1000 vaccinations. These results showed that prevalence of BCG lymphadenitis is higher in male. No positive correlation between occurrence of BCG lymphadenitis and birth weight < 2500 gram was found.BCG lymphadenitis usually occurs in the first 6 months after vaccination and peak time is 3-4 months after vaccination. Also this complication was seen after 12 months. The most of cases were in the category of gestational age > 37 weeks.

**Keywords:** BCG vaccination, Lymphadenitis, Infant

# P611 - 69: BORDETELLA PERTUSSIS FIM2 AND FIM3 EXPRESSION IN DIFFERENT STAGES OF CULTIVATION TO PRODUCE ACELLULAR PERTUSSIS VACCINE

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**Background and Aim:** Fimbriae (Fim2 and Fim3) is one of the most important virulence factors in Bordetella pertussis and it causes the adhesion of bacteria to the upper respiratory tract cells and immune response which accordingly should be considered as a necessary components in both whole-cell and acellular pertussis vaccines. According to the World Health Organization (WHO) in the whole-cell and acellular vaccines, the presence of fimbriae must be confirmed by two techniques including ELISA and slide agglutination.

**Methods:** In this research, two strains of B. pertussis 509 (with Fim2) and 134 (with Fim3) were cultured on BG agar and in B2 liquid medium and expression of fimbriae evaluated at different stages of cultivation. Then, indirect ELISA (Enzyme-linked immunosorbent assay) and slide agglutination assays were used to determine and evaluate the expression and quantity of the fimbriae during cultivation period. After confirming the expression of Fim2 and Fim3, two strains (134 and 509) were sub-cultured in B2 medium.

**Results:** According to the fimbriae expression, the best time for stopping and harvesting the cultivation were determined.

**Conclusion:** The results have shown that the high level of fimbriae expression and the best time for harvesting and stopping the culture is in the log phase. Although, the level of expression in two strains were dissimilar in different time points, but eventually the most expression level was in the log phase.

**Keywords:** Bordetella pertussis, vaccine, ELISA, fimbriae, Fim2, Fim3

# P612 - 80: SYNERGISTIC IMMUNOGENICITY OF A.BAUMANNII BAP AND FLAGELLIN ADJUVANT

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**Background and Aim:** To study immunogenic role of N terminal Flagellin of P.aeruginosa as an adjuvant for Biofilm associated protein (Bap), a specific cell surface protein against Acinetobacter baumannii.

**Methods:** The N terminal flagellin gene was amplified by PCR method. The pET28a(+) vector and PCR products were double digested with HindIII and EcoR I restriction enzymes. The ligation of N terminal flagellin into pET28a(+) was performed using T4 DNA ligase. The recombinant DNA plasmids, pET28a–F, were transformed into E. coli BL21(DE3) as a suitable expression host. pET28a(+) vector harboring a conserved region of Bap from our laboratory stock was used. The recombinant proteins were expressed, analyzed by SDS-PAGE method and were purified by affinity chromatography with His-Tag residues followed by confirmation with western blotting. Mice were immunized with recombinant N terminal flagellin and Bap subunits. The immunized animals were i.n challenged with A. baumannii and P. aeruginosa.

**Results:** The flagellin enhanced the immunogenicity of Bap causing an increase in specific IgG titers in serum. Post challenge lungs, hepatic and splenic tissues of mice group immunized with Bap-Flagellin had significantly lower bacterial load than the control groups. In this study, although the serum IgG titers of mice group immunized with Bap-Flagellin was lower compared to the control group at the 6th week ($P < 0.05$), no protective immunity was seen.

**Conclusion:** These results indicate that Pseudomonas Flagellin can play a role as an adjuvant for Bap A. baumannii. ELIZA results indicated this model could be useful to evaluate new vaccine regimens against infections by A. baumannii.

**Keywords:** A. baumannii, P. aeruginosa,biofilm, adjuvant, vaccine

# P613 - 102: NEW DEVICE TO FACILITATE VACCINE DEVELOPMENT AND OTHER LAB TESTS

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**Background and Aim:** Today, variety of plates are used for laboratory tests around the world. 96 well plates are applied for lots of laboratories tests like ELISA, MTT, PCR, etc. Small wells of Plate, will increase user mistake and subsequently enhance cost and time. Scientists are made some helper devices to solve the problem. But these instruments need pre-programming or information transfer using USB, which can increase the error rate. Here, a new device capable of reducing user error while working with 96 well plate is designed.

**Methods:** In order to solve the problem, an instrument with 2 different part were constructed. In one side there is a place the same size as the 96 well plate. Under each well a lamp were located. The other side is composed of a 96 buttons, small sites to write the contents and also 96 places for locating microtubes.

**Results:** The device dimension is 60* 24* 6 cm. the instrument is so useful and greatly could decrease the user fault by locating the true well, microtube and right plan.

**Conclusion:** This helper instrument can reduce the user error and consequently can cut the price and save the time in different costly biochemical, pharmacological or immunological tests in research laboratories.

**Keywords:** ELISA, Biochemical, Pharmacological, Immunological, Helper device

# P614 - 157: CLONING AND EXPRESSION OF HUMAN INTERFERON ALPHA-2B IN ESCHERICHIA COLI AND PURIFYING WITH CHITTIN-INTEIN AFFINITY COLUMN

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**Background and Aim:** Interferons are a group of Secretory proteins from cytokine family,that secrets by eukaryotic cells that stimulates by viruses,bacterias and some other immunogens.different kinds of interferons have major rolls in Treatment of many disease like cansers,immunodeficiency disease and some viral infections.because of importance of human interferon alpha 2b in Iran and around the world, producing this drug is possible with biochemical methods but its very difficult.because normal cells rarely produce this protein.the purpose of this study is cloning and expression of human interferon alpha 2b in Escherichia coli and purification of it.

**Methods:** In this research, Alpa 2b interferon gene was cloned in pTXb1 expression vector under the control of T7 promoter, intein tag and a self cleavage site using NdeI and SapI restriction enzymes.The expression vector was transformed into Escherichia coli strain BL21.Gene expression of alpha interferon was examined by SDS-PAGE analysis.then the protein was purified by chittin-intein Affinity chromatography.

**Results:** The results showed that Alpha 2b interferon was produced in bacterial expression system and then succesfully purified by affinity chromatography.

**Conclusion:** Our study showed that the production of pharmaceutical recombinant protein in bacterial expression system.and can be ustilized as a cheaper source and efficient.allthough. in addition purifying with one step chromatography and cleavage of self cleavage part of protein is very easy and efficient.

**Keywords:** Inreferon alpha 2b, pTXb1, Escherichia coli ,IPTG, intein tag, chittin

# P615 - 160: CLONING AND PERIPLASMIC EXPRESSION OF RECOMBINANT HUMAN BETA INTERFERON IN ESCHERICHIA COLI

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**Background and Aim:** Human Interferonβ is a member of typeI interferons which includes a large family of structurally related cytokines. This protein is an antiproliferative, antiviral and immune modulatory glycoprotein that typically produces by fibroblasts and has already been used to treat viral hepatitis, glioma, melanoma and recently multiple sclerosis. The aim of this study is cloning and periplasmic expression of recombinant human interferon beta in E. coli to gain the proper folding of this protein.

**Methods:** Human interferon beta encoding sequence was synthesized by PCR using the specific primers containing DsbA signal sequence. The amplified fragment was cloned into the expression vector pET21b(+). Then, the recombinant vector, pET21b-INFβ, was transformed into the E. coli BL21(DE3) competent cells. After Induction of the transformed cells by IPTG, the expression of recombinant protein was evaluated by SDS-PAGE and Western blot using the anti-INFβ antibody.

**Results:** The cloning of recombinant human interferon β into pET21b was confirmed by colony PCR and restriction enzyme mapping .SDS-PAGE and western blotting confirmed the expression of 19 kDa recombinant soluble human INFβ protein.

**Conclusion:** The data was shown that the DsbA signal peptide and pET21b are suitable factors for the soluble expression of recombinant human INFβ protein in E. coli.

**Keywords:** Escherichia coli , INFβ , DsbA signal peptide , periplasmic expression , cloning

# P616 - 179: PRODUCTION OF HIGH AFFINITY VARIANT OF RECOMBINANT HUMAN GROWTH HORMONE BY GENETIC MANIPULATION OF THE MOLECULE

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**Background and Aim:** Human growth hormone (hGH) is a single-chain peptide secreted from the pituitary gland.hGH plays an important role in growth and its deficiency in the body leads to various diseases.GH deficiency causes multiple diseases including dwarfism and its replacement requires frequent injections of high doses of the recombinant hormone.The aim of this study was to produce super-agonists,long-acting growth hormone molecules through genetic manipulation to enhance the affinity of this hormone to its receptor on cell surface.Using long acting super-agonist should lower the required does,injection intervals and the cost of treatment.

**Methods:** Molecule structure and binding site of the GH-GHR and amino acids involved were analyzed using available soft-wares.Eight amino acids were targeted for replacement.The new construct was designed and synthesized and was cloned into p-cold expression plasmid.The mutant rhGH was produced in E. coli and purified using its His-tag by Nickel column.The expression and properties of the mutant protein was analyzed using ELISA,SDS page,dot and western blotting techniques.Biological activity of the mutant rhGH was tested in cell culture.

**Results:** High levels of mutant rhGH were produced using E. coli prokaryotic protein production system.

**Conclusion:** The affinity of GH to GHR can be increased by introducing appropriate mutations in the GH molecules.

**Keywords:** E . coli strain, recombinant human growth hormone, ELISA, western blotting

# P617 - 220: STUDY OF CORRELATION BETWEEN THE RESULTS OF QUALITY CONTROL OF BCG VACCINE PRODUCED IN IRAN

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**Background and Aim:** BCG vaccine is a live attenuated strain of Mycobacterium bovis that was isolated from cattle with tuberculosis and cultured for a period of 13years. In Iran, BCG vaccine strain is Pasteur 1173p2 that has a known reactogenecity profile after intradermal inoculation in children. To measure potency and adverse effects of the vaccine, some quality control tests are performed. The aim of this retrospective study is determination of correlation among the results of Colony count test, Warburg test, and dermal reactivity skin tests of BCG vaccine prepared by Pasteur 1173p2 strain in Iran from 2012 to 2014.

**Methods:** In this study 62 batches of lyophilized BCG vaccine that had been produced by classical method in static flasks containing Sauton culture media were used and results of Quality control tests including of Colony count test, Warburg test and skin reaction test were performed in accordance with WHO TRSs were analyzed and Minitab software, version 17.1.0 was used to data analysis.

**Results:** The results of correlation in confidence level 95% (p-value <=0.05) show that there are a significant relationship between colony count of concentrated bulk and other tests. Also Between different dilutions skin reaction tests was significant correlation. On the other hand, it was not found any relationship between colony count of vaccine and dermal reactivity skin tests.

**Conclusio:** In this study because of outlier results, 4 batches were omitted. Because of time-consuming, colony count test is not suitable but Warburg test is reliable as an alternative method for colony count test as potency test.

**Keywords:** BCG, Correlation, Vaccine, colony count, warburg

# P618 - 226: THE CONCENTRATION AND PURIFICATION OF RABIES VIRUS (PV STRAIN) BY TANGENTIAL FLOW FILTRATION AND ITS EFFECT ON VACCINE POTENCY

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**Background and Aim:** Rabies is caused by rod- or bullet-shaped neurotropic viruses of the genus Lyssavirus belonged in the family Rhabdoviridae. To achieve the ideal conditions for purification and concentrating Rabies virus harvested from cell cultures used tangential flow filtration (TFF) method for increasing the vaccine potency.

**Methods:** BHK21C13 cell grown fixed rabies virus PV strain was treated by Tangential Flow Filtration technique on semi-permeable membranes (molecular mass cut-off of 100000 Dalton) at 0-4oC for concentration and purification Rabies virus. Titration of stock virus suspension carried out by Lab-Tech method by using tissue culture chamber slide based on fluorescent focus-forming unit (FFU) assay. In vivo inactivity test has been done on mice which inoculated intracerebrally with single doses of inactivated vaccine. The potency of the vaccine was established by the National Institutes of Health test which 2 times with 14 days apart, vaccines injected intraperitoneally .Intracerebral challenge was carried out by CVS one week after second injection and the animals were observed daily for 14 days.

**Results:** Based on the in-vivo evaluation of inactivated test, in both inactivated samples, after 14 days, any death has not been reported in vaccinated mice. Based on results, viral titration test in concentrated samples showed increase to 10-fold and potency test result by NIH test based on ED50 revealed enhancement in concentrated vaccine potency compared with native vaccine.

**Conclusion:** Data showed that the ultrafiltration by this method is effective to use in large-scale for concentration of the virus with high glycoprotein G activity which was approved by NIH test.

**Keywords:** Rabies virus, Tangential flow filtration (TFF), Potency, Vaccine

# P619 - 240: FUSION OF CLOSTRIDIUM PERFRINGENS TYPE D EPSILON TOXIN GENE AND CLOSTRIDIUM SEPTICUM ALPHA TOXIN GENE USING FUSION PCR

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**Background and Aim:** Designing and producing a proper fusion construction is the most important problem of producing large quantities of functional protein. This construction should have all necessary components of a real gene. A good designed fusion gene construction could be cloned into a good and suitable host. Clostridium perfringens and Clostridium septicum are important pathogens of humans and livestock and produces numerous toxins including epsilon and alpha which are responsible for severe diseases.

**Methods:** In the present study a new construction containing C. perfringens type D epsilon toxin gene and C. septicum alpha toxin gene was designed and produced. At first, freez-dried C. perfringens type D and C. septicum was transferred into Brain-heart medium and incubated for 12-18 hours in anaerobic jar in 37°C. Genomic DNA was extracted using phenol-chloroform. ε ,α toxin nucleotide sequences retrieved from GenBank and specific primers were designed for these genes amplification. Then in order to produce a chimeric gene containing amplified partial cds of etxD and partial cds of csa which are linked together by the AEAAAKEAAAKA fragment as a small linker, based on fusion PCR and using of Pfu DNA polymerase, epsilon forward and alpha reverse primers were used.

**Results:** Findings showed that the designed fusion gene construction is suitable to cloning and expression of chimeric fusion protein.

**Conclusion:** Based on the latest information, this is the first design and produce of epsilon-alpha fusion gene, which could be used for development of a recombinant epsilon-alpha fusion protein vaccine.

**Keywords:** C. perfringens, C. septicum, epsilon, alpha, fusion PCR

# P620 - 244: EVALUATION THE RELATION BETWEEN ALZHEIMER'S DISEASE AND ANTI-MICROBIAL TOXIN'S VACCINATION IN ELDERLY INDIVIDUALS

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**Background and Aim:** While Alzheimer's disease (AD) is the most frequent neurodegenerative disorder, its etiology is not entirely understood.

**Methods:** The previous attempts to find related risk factors showed influenza, tetanus, polio, or diphtheria vaccination in adulthood was significantly associated with decreased incidence of Alzheimer's disease. The primary conclusion was that general immune response to immunization play a role in the prevention of AD, but statistical reports show that the role of diphtheria or tetanus vaccination in AD was much more than others.

**Results:** A hypothesis could justify these findings is the potential role of some bacterial toxins in AD, one of the most probable toxin that could be attributed to etiology of AD belongs to Corynebacterium diphtheriae, named diphtheria toxin. C. diphtheriae could be found in nasal cavity that could be contributed with olfactory dysfunction, one of the symptoms of AD, also diphtheria toxin similar to AD pathology could slow but progressive degrade neurons of the olfactory bulb and central nervous system. On the other hand, protein synthesis impairment During AD, is associated with dysfunction of elongation factor-2, the protein that cleaved by diphtheria toxin. Also, another experiment introduces Bordetella pertussis as an important cause of AD.

**Conclusion:** These evidences suggest elderly people getting Tetanus, Diphtheria, and Pertussis (Tdap) vaccination. In addition that this strategy is inexpensive, it's suggested by Food and Drug Administration (FDA), regardless of its application in AD. However, authors suggest that the effects of other component of vaccine, such as adjuvants, in AD individual vaccination, should be considered due to confounding data.

**Keywords:** Diphtheria-Tetanus-Pertussis Vaccine, Alzheimer's disease, Immunization, Secondary, diphtheria toxin, pertussis toxin

# P621 - 284: COMPARISION OF CYTOPATHIC EFFECT (CPE) AND HEMADSORPTION (HAD) METHODS OF POTENCY ESTIMATION OF VARIOUS MUMPS VACCINE STRAINS AND PRODUCTS

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**Background and Aim:** Mumps vaccine potency estimation methods have been subject of research in recent years because of discrepancy of the results obtained in different laboratories using different methods. In attempt to find the optimal method, various methods using real time PCR, flow cytometry, and plaque assay have been devised and evaluated. We have evaluated the use of Hemadsorption (HAd) and compared it with CPE method.

**Methods:** Four different Mumps vaccine products from 4 different sources containing Urabe, Hoshino, L-Zagreb, and Jeryl-Lynn strains, respectively, were tested for virus titer in 96 well cell culture plates on 3 different days and the results based on reading the CPE and hemadsorption positivity were calculated. Changes in titer against time were plotted. Morphology of CPE of each strain was recorded. 95% confidence interval was calculated, and Intermediate precision was evaluated. Closeness of the result of tests to the stated titer on the International Standard (IS) samples was evaluated as a measure of accuracy.

**Results:** Plateau stage for HAd and CPE methods were reached on days 7-8 and 8-9 respectively. The precision of Hemadsorption for all 4 strains was better than CPE method. Regarding accuracy, result of HAd were closer to IS stated titer, and Positive cases were easier to identify.

**Conclusion:** Hemadsorption method showed superiority to CPE in terms of precision and accuracy, and time. The technique is easy to establish and sharp distinction between positive and negative cases makes it easy to read. Various mumps strains don't behave similarly.

**Keywords:** Mumps, vaccine, potency, Hemadsorption

# P622 - 300: RECENT ADVANCES IN UROPATHOGENIC ESCHERICHIA COLI (UPEC) VACCINE DEVELOPMENT

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**Background and Aim:** Urinary tract infection (UTI) is the second most common infection in humans, results in huge annual economic costs and contributes to a rise in antibiotic resistance .In an effort to provide a more effective and less costly alternative to antibiotic therapy for UTI management, progress has been made in the development of a preventive vaccine. Although multiple classes of UPEC virulence factors have been targets of UTI vaccine, including bacterial surface polysaccharides, fimbrial adhesins, toxins and outer membrane iron factor to be effective against UPEC , vaccines based on genetically modified strains of UPEC are also in development.

**Methods:** Mice immunized with an attenuated mutant UPEC strain unable to produce capsule or the O antigen of LPS, and the humoral immune response was measured by serum antibody levels.

**Results:** Measured by serum antibody levels, attenuated mutant strain generated a significantly greater overall humoral immune response, even directed against noncapsular and non-O-antigenic epitopes, than the wild-type strain.

**Conclusion:** Since UPEC strains are generally positive for capsule and O antigen, the potential of surface polysaccharides to mask nonpolysaccharide epitopes and reduce the efficiency of antibody binding may provide additional motivation to identify capsular antigens or vaccine targets that are external to capsule.

**Keywords:** UPEC, UTI vaccine, urinary tract infection

# P623 - 308: SYSTEMIC CYTOKINE PROFILES IN BALB/C MICE IMMUNIZED WITH AN ORALLY VACCINE CANDIDATE AGAINST GAS GANGRENE AND NECROTIC ENTERITIS, LC-ALPHA STRAIN

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**Background and Aim:** The alpha-toxin is one of the virulence factors of Clostridium perfringens (C. perfringens) for gas gangrene in humans and animals or necrotic enteritis in poultry. Serum cytokine profiles in BALB/c mice after immunization with LC-alpha strain, an orally vaccine candidate against these diseases, were studied.

**Methods:** The C-terminal domain of alpha-toxin (cpa247-370) was synthesized and cloned into pT1NX vector. This surface-expressing plasmid was electroporated into Lactobacillus casei (L. casei) ATCC 393, generating the recombinant L. casei strain expressing alpha-toxoid (LC-alpha strain). Pooled mouse sera from the vaccinated mice with LC-alpha strain and controls (L. casei that carrying the empty vector (LCP strain) and PBS groups) were analyzed by a mouse Th1/Th2 ELISA Ready-SET-Go Kit (eBioscience, San Diego, CA) for Interleukin-2 (IL-2), IL-4, IL-10, and interferon-γ (IFNγ) according to the manufacturer's instructions.

**Results:** Results were shown that the vaccinated mice with LC-alpha had higher interferon-gamma serum levels (974 Pg/100 microliter) compared to the vaccinated mice with LCP (250 Pg/100 microliter), and PBS group (187.5 Pg/100 microliter). In contrast, the mice vaccinated with LC-alpha and LCP had the same IL-2 serum levels (15.6 Pg/100 microliter) than the PBS group (6.6 Pg/100 microliter).

**Conclusion:** With respect to the controls, the results identified that the vaccinated mice with LC-alpha had significantly higher IFNγ concentrations ($P<0.05$). This indicated that LC-alpha construct induced higher levels of Th1-promoting cytokines than Th2-promoting cytokines.

**Keywords:** Cytokine profile, LC-alpha Strain, Vaccine, Gas Gangrene, Necrotic Enteritis

# P624 - 315: EVALUATION OF THE EUKARYOTIC EXPRESSION OF MTB32C-HBHA FUSION GENE OF MYCOBACTERIUM TUBERCULOSIS IN HEPATOCARCINOMA CELL LINE

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**Background and Aim:** HBHA and Mtb32C have been isolated from culture supernatants of Mycobacterium tuberculosis (M. tuberculosis) and Mycobacterium bovis (M. bovis) and their immunogenicity in previous studies have been confirmed. In this study, capability of constructed vector containing two mycobacterial immunodaminant antigens (Mtb32C-HBHA), in producing new chimeric protein under the in-vitro condition was examined.

**Methods:** In present study Huh7.5 cells was transfected with Mtb32C-HBHA –pCDNA3.1+ recombinant vector by using the calcium phosphate method and expression of chimeric protein was assessed by RT-PCR and Western blot methods.

**Results:** Recombinant vector introduce to Huh7.5 cell and generation of recombinant Mtb32C-HBHA protein was evaluated by RT-PCR and Western blot methods. Results of RT-PCR and Western blot showed expression of 35.5 KD recombinant protein (Mtb32C-HBHA) in this cell line.

**Conclusion:** This study indicated, the constructed vector can produce two highly immunogenic antigens that fusion of them to gather makes chimeric antigen with new traits. Other attempts are needed to evaluate specific properties of this new antigen such as molecular conformation modeling and immunologic characteristics in future studies.

**Keywords:** Mycobacterium tuberculosis, HBHA , Mtb32C, Huh7.5 cells

# P625 - 334: CO EXPRESSION OF HBHA AND MTB32C GENES FROM MYCOBACTERIUM TUBERCULOSIS H37RV IN PROKARYOTIC SYSTEM

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**Background and Aim:** HBHA (heparin-binding hemagglutinin) is a surface adhesin that mediate in binding to host cells by its own unique, carboxyl-terminal region. This methylated region has specific motif that rich of lysine-, alanine-, and proline amino acids. More recently, has been shown that HBHA has potential activity in stimulating immune responses and is a promising new candidate for diagnostic and protective antigen against tuberculosis. The aim of this study was to isolation and production mycobacterial latency heparin-binding haemagglutinin antigen as new antigen in interferon-gamma release assay test (IGRAs).

**Methods:** In present work hbha and mtb32C genes were isolated from Mycobacterium tuberculosis H37Rv genome by PCR. PCR products and pet21+ vector were digested with specific restriction enzymes and then submitted to ligation procedure. E. coli BL21-CodonPlus (DE3) competent cells were transformed with recombinant Mtb32C-HBHA –pet21+ vector. Expression of recombinant protein (Mtb32C-HBHA) was confirmed with SDS-PAGE and Western blot methods.

**Results:** Detection of about 500 bp gene in Colony-PCR method and sequencing of recombinant pet-Mtb32C-HBHA vector all confirmed the accuracy of cloning procedure. Also presence of a 36 KDa protein band was confirmed with Western blotting method.

**Conclusion:** In this study, expression of Mtb32C-HBHA protein in prokaryotic system was done. Other studies are needed to evaluate efficacy of recombinant Mtb32C-HBHA protein in diagnosis of latent tuberculosis

**Keywords:** PCR, Interferon-gamma release test, Mycobacterium tuberculosis, HBHA protein

# P626 - 336: ISOLATION,CLONING AND MOLECULAR ANALYSIS OF AG85A AND TB10.4 GENES FROM MYCOBACTERIUM TUBERCULOSIS

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**Background and Aim:** Novel TB vaccines that aim to boost and/or replace Bacillus Calmette-Guerin (BCG) are currently in development. DNA vaccines can stimulate both humoral and cell-mediated immunity in different animal models of TB and is thought to be a promising strategy in the development of new vaccines against TB. The aim of this study was to design and construct a DNA vaccine encoding ag85a and tb10.4 fusion genes of Mycobacterium tuberculosis.

**Methods:** Tb10.4 fragment was amplified by PCR and the products were digested with restriction enzymes. Next, it was cloned into the pcDNA3.1+ plasmid. The ag85a gene and pcDNA3.1+/tb10.4 plasmid were digested by EcoRI and BamHI restriction enzymes. Constructed vector was sequenced and molecular analysis was done by using bioiinformatic software such as DNAMAN.

**Results:** Using electrophoresis of PCR products, fragments 297 bp for tb10.4 and 1017 bp for ag85a were observed.alignment of ag85a-tb10.4 genom sequence with reference genes in GenBank showed exact identity that indicate correction of aii cloning procedures. Eukaryotic cells transfection with pcDNA3.1+/tb10.4-ag85a vector was confirmed with cDNA synthesis and existence of tb10.4-ag85a fusion gene was confirmed with RT-PCR.

**Conclusion:** In this study, tb10.4 and ag85a genes were isolated from Mycobacterium tuberculosis H37Rv strain and cloned into pcDNA3.1+ also in this study capability of constructed vector in producing fusion Ag85a-tb10.4 protein was confirmed with RT-PCR. pcDNA3.1+/tb10.4-ag85a vector can be used for further studies in future.

**Keywords:** Mycobacterium tuberculosis; ag85a; tb10.4; pcDNA3.1+; DNA vaccine.

# P627 - 361: IN SILICO DESIGN AND ANALYSIS OF FUSION PROTEIN CONTAINING VIRULENCE FACTOR OF PSEUDOMONAS AERUGINOSA AS A VACCINE CANDIDATE

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic human pathogen with high-level resistance to multiple antibiotics. The development of methods to prevent infections such as vaccines has become a controversial interest. The most advanced tendency focuses on vaccinal compounds obtained by combinations of different antigens. Immunization targets various antigens some of which have been reported and play important roles during chronic and acute infections of P. aeruginosa. Some of these factors include OprF (major outer membrane protein), ExoA (Exotoxin A), and LecB (fucose-binding lectin). In silico studies are significant in designing a new chimeric antigen having immunogenic potential of several antigens.

**Methods:** A synthetic chimeric gene that encodes integrated OprF, LecB, and ExoA has been designed. Various stages of this study were categorized: the secondary and tertiary structures of the fusion protein were predicted by GOR4 and I-TASSER online web servers. The validation for 3D structure was performed using Ramachandran plot statistics. Moreover, B-cell and T-cell epitope mapping and allergenicity for this chimeric protein was carried out using an appropriate server.

**Results:** Validation result sketches that 85.6% residues located in favoured or additional allowed region of Ramachandran plot that indicates the chimeric protein is stable. In addition, the chimeric protein has an epitope with strong potential to induce both B-cell and T-cell mediated immune responses.

**Conclusion:** Our results support that the chimeric protein designed by in silico methods that has been used as a multi-subunit vaccine is capable of strongly evoking both humoral and cell-mediated immune responses in mouse models.

**Keywords:** Pseudomonas aeruginosa, Fusion Protein, In Silico, Multi-subunit vaccine

# P628 - 367: NATURAL IMMUNITY TO MENINGOCOCCUS IN SPLENECTOMIZED AND NON-SPLENECTOMIZED MAJOR BETA THALASSEMIA PATIENTS

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**Background and Aim:** Splenectomy may get necessary for most patients of major thalassemia. Some believe that splenectomy can cause poor immune response, exposing the patient to serious infections like meningococcal ones. Since meningitis can lead to death, the present study was managed to study the Evaluation and comparison of natural Immunity to meningococcus in splenectomized and non-splenectomized major beta thalassemia patients referring to thalassemia units of Jahrom.

**Methods:** This descriptive cross sectional study was done with 263 patients of major beta thalassemia participating in. patients divided to splenectomized and non-splenectomized groups. Remains of venous blood samples was used to measure the serum levels of anti-meningococcal antibody, using ELISA kits. Collected data analyzed by SPSS version 18.

**Results:** No significant differences were seen between serum levels of anti-meningococcal antibody in two groups. No significant differences were seen according to age and sex either.

**Conclusion:** Splenectomy doesn't affect the immune response against Neisseria meningitides.

**Keywords:** Beta thalassemia, meningococcus, splenectomy

# P629 - 368: IMMUNITY LEVEL TO DIPHTHERIA IN BETA-THALASSEMIA PATIENTS

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**Background and Aim:** Beta thalassemia major which is very common, is a central health problem in Iran with at least annual 800 new cases. These patients are more often affected by several infections. It's suggested a chief defect in the host defense that can caused by iron overload, splenectomy and repeated transfusion. The aim of study was to investigate the immunity of patients with beta thalassemia major to diphtheria.

**Methods:** Anti diphtheria toxin antibody concentration and serum ferritin levels were determined in 244 patients with thalassemia major and in 222 healthy subjects of similar ages as control group, by an ELISA and CLIA methods, respectively. Subjects who had diphtheria antibody level >0.1 IU/ml as complete protection, between 0.1 and 0.01 IU/ml as partial protection and <0.01 IU/ml as no protection. For the analysis we used SPSS version 11.5 software. A two sided P-value less 0.05 was considered statistically significant.

**Results:** All of participants had protective serum anti diphtheria level, But the mean serum anti diphtheria antibody level in healthy subjects was higher than nonsplenectomized (P=0.001) and splenectomized (p=0.014) thalassemic groups. Only 30.2% and 18.3% of anti-diphtheria antibody (IgG) was dependent to serum ferritin level in unsplenectomized and splenectomized patients, respectively (P< 0.001), while, in healthy subjects only 1.4% of anti-diphtheria antibody was dependent to serum ferritin.

**Conclusion:** In conclusion, patients with beta thalassemia major had lower anti-diphtheria antibody level than healthy subjects. Thus monitoring immunization status and recommendations for vaccine are essential for increased serum anti-diphtheria antibody concentration.

**Keywords:** Diphtheria antibody, splenectomy, thalassemia, immunity

# P630 - 398: SURFACE DISPLAY OF IMMUNOGENIC EPITOPES OF CLOSTRIDIUM PERFRINGENS ON THE BACILLUS SUBTILIS AS A POTENTIAL LIVE VACCINE FOR NECROTIC ENTERITIS

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**Background and Aim:** Necrotic enteritis is a common severe bacterial gastro- intestinal disease in the broiler flocks imposing high rate of mortality and significant economic burden on the poultry industry worldwide. The causative agent, Clostridium perfringens, is a Gram-positive anaerobe which produces numerous toxins. The primary method of disease control has been to use in-feed antibiotics. This situation has increased the need to develop other methods to control necrotic enteritis in poultry. Vaccination is an alternative approach that could be deployed to manage necrotic enteritis in the absence of antibiotics.

**Methods:** In the present study, the immunogenic epitopes of one important toxin of C. perfringens involved in pathogenesis of NE (NetB) was displayed on the Bacillus subtilis surface. For this purpose, different construct combinations were designed in our group and analyzed using proper bioinformatics tools. Based on a modeled tertiary structure, a proper combination was selected for synthesis. In next step, this construct was cloned in an engineered vector containing essential sequences for surface display of proteins on the vegetative B. subtilis cells. This recombinant vector was transformed to B. subtilis using natural transformation method.

**Results:** Successful surface display of the heterologous proteins was confirmed by proper techniques like SDS-PAGE and western blot analysis.

**Conclusion:** It was the first step in designing a genetically engineered vaccine against Necrotic enteritis. Further research is needed in order to test efficacy and efficiency of these data.

**Keywords:** Necrotic enteritis, Clostridium perfringens, B. subtilis, immunogenic epitopes, Surface display, Toxin

# P631 - 414: RECOMBINANT LACTOCOCCUS LACTIS SECRETING INDUCIBLE EXPRESSED FUNCTIONAL LISTERIOLYSIN O

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**Background and Aim:** Lactococcus lactis a gram positive lactic acid bacterium, is increasingly used in modern biotechnological applications such as recombinant protein expression in addition to its traditional use in food fermentation . We used lactococcal specific NICE expression system to clone Listeria monocytogenes hly gene in this strain. This gene encodes the protein listeriolysin O (LLO), a cytotoxin with hemolytic activity and many other functions, most important of them contribution to intracellular survival by escape from phagosomal compartment. This feature is important in recombinant vaccine technology by influencing cellular immunity. Our aim was to clone hly gene and evaluate some basic functions of inducible secretional expressed LLO in recombinant Lactococcus strain.

**Methods:** The plasmid pNZ8110 +hly was constructed and transferred into Lactococcus lactis NZ9000. The recombinant which could express HLY protein (LLO) was obtained and secretion identified after induction using 5ng/µl nisin by SDS PAGE electrophoresis of supernatant and western blotting. Hemolytic activity was assayed using sheep, human and mouse RBC. Intracellular growth of recombinant bacteria in phagocytic cells were evaluated using murine macrophage cell line J774.Viability was measured in two times interval by application of gentamicin and performing colony count of released bacteria.

**Results:** Positive hemolytic activity revealed the biological function of the expressed LLO protein. Viability of recombinant strain was significantly lower than Listeria monocytogenes wild strain ($p<0.005$).

**Conclusion:** This engineered strain needs more evaluation to be proposed as a live recombinant vaccine candidate against Listeria monocytogenes and on the other hand as a vaccine vector for expression of other antigens.

**Keywords:** Listeriolysin O , Listeria monocytogenese, Lactococcus lactis, hemolytic activity, viability

# P632 - 427: EXPRESSION AND PURIFICATION THE MRPA PROTEIN OF PROTEUS MIRABILIS AS A NEW TARGET AGAINST URINARY TRACT INFECTIONS

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**Background and Aim:** Urinary tract infections (UTIs) are infectious diseases associated with colonization, growth and spreading of bacteria within the urinary tract. The bacteria from the genus Proteus, especially P. mirabilis, are significant UTI pathogenic issues. Several observations have shown that MR/P fimbria by having the MrpA subunit is an important virulence factor of P. mirabilis in ascending UTIs. Antibiotics are common therapy for UTIs and increase in antibiotic resistance make the need for an effective vaccine against UTIs. Thus, in this study, we selected MrpA domain of P. mirabilis as a vaccine candidate and expressed it in prokaryotic host.

**Methods:** The MrpA protein sequence was obtained from Genebank database and primers were designed with Vector-NTI software. The MrpA protein wass composed of 175 amino acid residues. Then, the mrpA gene was cloned and expressed in pET28a-BL21 system. Then, purification of the expressed protein was performed by Ni-NTA columns.

**Results:** Cloning of mrpA gene was confirmed by PCR, double digest enzyme, and finally DNA sequencing. Then, expression of MrpA was performed successfully and confirmed by SDS-PAGE and Western blot with anti-His tag antibody. The size of this protein was about 19 KD.

**Conclusion:** According to our results, MrpA was successfully expressed in E. coli and purified with high yield. This protein may have the potential to induce effective immune responses against UTIs, thus the ability of this protein in activating immune responses is under study.

**Keywords:** Urinary tract infections, proteus mirabilis, MrpA, Vaccine candidate, Expression, Purification

# P633 - 479: EVALUATION OF MICE HUMORAL IMMUNE RESPONSES AGAINST VACCINAL STRAIN OF BACILLUS ANTRASIS

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**Background and Aim:** Anthrax is one of the most important zoonotic diseases in the world that it has been caused by Bacillus anthracis. Nowadays, different vaccines are available to protect against this disease which they are based on 34F2 strain (spore-forming). In order to investigation of the humoral immunity in infected or vaccinated animals, a fast and reliable serological test must be developed. In this study, the humoral immune responses of vaccinal and acute strains of Bacillus anthracis have been investigated.

**Methods:** Two different vaccinal and acute strains (34F2 and 17jb respectively) of Bacillus anthracis has been cultured on blood agar medium. Different amount of bacteria was injected to rabbit for three times. The levels of specific polyclonal antibody have been measured by homemade indirect ELISA method.

**Results:** The results indicated that antibody levels were increased after first immunization and reached to its highest levels after 30 day ($p<0.05$). The levels of antibody has no significant difference between vaccinal and acute strains ($p>0.05$). The best responses were observed in animals who injected by 5×105 bacteria. The 17jb strains have been noted as best antigen for ELISA method based on this study.

**Conclusion:** In this study polyclonal antibody against both acute and vaccinal starins were produced which was detected by ELISA method. Furthermore, the produced antibody could be purified and used for next diagnostic studies.

**Keywords:** Bacillus anthracis, antibody, 17jb, 34f2, ELISA

# P634 - 511: OPTIMIZATION OF HA TEST (HEMAGGLUTINATION ASSAY) FOR DETECTING FILAMENTOUS HEMAGGLUTININ ANTIGEN AND COMPARISON THIS TECHNIQUE WITH ELISA

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**Background and Aim:** Bordetella pertussis is the agent of pertussis disease that causes death thousands children each year around the world. Filamentous Hemagglutinin (FHA) is known as one of the most important adhesin antigens has a main role in whole cells and acellular pertussis vaccines immunity.

**Methods:** Producing of FHA was evaluated by different strains (509, 134, 18323 and Tohama) of Bordetella Pertussis in different medium (Verway and B2) and different growth conditions. Several samples were collected during the bacteria growth phase from medium culture in different times and bacterial growth was measured by turbidity test and the amount of attached or released FHA was measured by Hemagglutinin assey (HA) and ELISA kit.

**Results:** Data showed HA was set up and optimized for quantity determination of FHA in this study. Depend of our results, Strain 509 of Bordetella Pertussis, grew and released FHA more than other strains. The maximum released FHA was 414 ng/ml after 40 hours in B2 medium culture.

**Conclusion:** Due to this procedure, we can optimaized and developed the cost and immunity of pertussis vaccine by determination of the best time, condition and location of FHA antigen production. HA as an inexpensive and practical this can be replaced by ELISA kit for in process quality control for pertussis vaccine companies.

**Keywords:** Bordetella Pertussis, FHA, Hemagglutination assay, ELISA

# P635 - 531: CLONING, EXPRESSION, AND PRODUCTION OF RECOMBINANT VIRB6 OF BRUCELLA ABORTUS

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**Background and Aim:** Brucellosis is a globally distributed zoonotic disease of economic significance. Efficient diagnosis of infected human and animals and prevention of new diseases are both essential for eradication brucellosis. Immunologic evaluation of diverse antigens of Brucella fuel the progression of prevention and diagnosis investigations; this necessitates the production of antigens. Here, we report the production of recombinant VirB6 protein of Brucella abortus.

**Methods:** Brucella virb6 gene was amplified with PrimStar HS DNA polymerase, cloned in pJET1.2 and sequenced. The omp2b gene was subcloned from confirmed vectors in pET28a(+).Recombinant pET28- virb6 vectors were transferred into E coli BL21(DE3). Expression of recombinant protein was induced by IPTG and confirmed by western-blotting. Recombinant protein was purified using nickel resin columns and was confirmed by SDS-PAGE and western-blotting with anti-Brucella antiserum and infected cattle. Finally, antigenicity of purified recombinant VirB6 was analyzed by serum samples of infected animals.

**Results:** Sequencing results of the cloned plasmid vector and western-blot using specific antibodies confirms the cloning procedure. Recognition of antibody to the recombinant VirB6 in serum samples of infected animals suggests the stimulation of immune response to this surface antigen during brucellosis.

**Conclusion:** Our results show VirB6 of Brucella abortus is an appropriate antigen for further investigations in vaccines and serologic diagnosis programs.

**Keywords:** Brucellosis, Brucella abortus, VirB6

# P636 - 538: HEMAGGLUTININ ANTIGEN CONTENT OF THREE DIFFERENT TYPES OF INFLUENZA VACCINES

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**Background and Aim:** Main non-adjuvanted licensed flu vaccines in Iran are of three different types, ie split virion, subunit, and virosomal. The efficacy of vaccines has a positive correlation with their HA antigen content that is measured by SRID (Single Radial Immuno Diffusion) method in QC laboratories. Lower limit of HA content is 15 ug/dose. Vaxigrip, Influvac, and Inflexal were tested for their HA content by SRID method.

**Methods:** Three different Influenza vaccine types from 3 different brands i.e. Vaxigrip (split virion), Influvac (subunit), and Inflexal (virosomal) were tested, in parallel, for their HA content by SRID method. WHO international Standard was used for standardization. Four different concentrations of vaccines were tested on two separate runs in two different days, and in each run, each vaccine was tested in duplicate. Calculation were performed by Slope-Ratio Method using SRA statistical software.

**Results:** Analytical performance parameters (Accuracy and Precision and linearity) of the method for all 3 types are acceptable and allow the method to be used for the 3 types of vaccines. Comparison of the QC lab results were close to the manufacturer's results. Vaxigrip 17.3 vs 17.6; Influvac 16.24 vs 16.5; Inflexal 17.2 vs 17 respectively.

**Conclusion:** SRID method was validated and successfully used on three different types of flu vaccine used in Iran. Even though the tested vaccines have different contents of hemagglutinin antigens, the difference is not significant. In addition, Type of vaccine can also impact its immunogenicity and protective efficacy which needs to be investigated in comparative clinical trials.

**Keywords:** Influenza, vaccine, Potency, SRID

# P637 - 539: CLONING OF A MULTI-EPITOPE FUSION PROTEIN OF HELICOBACTER PYLORI FOR EXPRESSION IN LETTUCE

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**Background and Aim:** Helicobacter pylori, a Gram negative, spiral and microaerophilic bacterium, reside in the gastric mucosa and it infects over half of the world population. In developing countries such as Iran the 80 percentage of people are infected with H. pylori. The H. pylori infections are linked to chronic gastritis, peptic ulcer and gastric cancer and have been categorized with world health organization as class one human carcinogen. Infection of this bacterium has been treated with antibiotic but it has been increased owing to the emergence of antibiotic-resistance strains. Vaccination can be effective route to eliminate H. pylori infections. Transgenic plants could be served as oral vaccine for such mucosal infections.

**Methods:** In this study, three epitopes of urease B subunit were fused with H. pylori flagellin gene. Nucleic acid sequence of the fusion protein was subjected to codon optimization process using some on-line and off-line bio-informatic softwares. Then the codon optimized gene was cloned into pBluscript as cloning vector in a joint project with a Japanese research group. Synthesized gene then was sub-cloned in the pBi121 as a plant expression vector.

**Results:** The identity of cloned sequence in each step was confirmed by digestion and electrophoresis. Transformation of fusion protein gene to the germ-free Lettuce plant was performed by Agrobacterium tumefacience.

**Conclusion:** The identity of cloned sequence in each step was confirmed by digestion and electrophoresis and a PCR and subsequent sequencing also could confirm the identity of cloned fusion protein.

**Keywords:** Helicobacter pylori, Lettuce, vaccine

# P638 - 567: PRODUCTION OF A NEW CHIMERIC FUSION PROTEIN CONTAINIG OF CLOSTRIDIUM PERFRINGENS TYPE D EPSILON TOXIN AND CLOSTRIDIUM SEPTICUM ALPHA TOXIN GENES

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**Background and Aim:** Clostridium perfringens is gram-positive, rod-shaped, anaerobic, spore-forming and heat-resistant bacterium which is subdivided to 5 groups (A to E). Epsilon toxin is a major lethal toxin which is produced by C. perfringens types B and D It is responsible for the pathogenesis of fatal enterotoxemia in domestic animals. Clostridium septicum alpha toxin is lethal and is responsible for a serious disease known as gas gangrene.

**Methods:** In the present study, epsilon-alpha fusion gene was subcloned into expression vector and transformed into E. coli host strain. The epsilon-alpha fusion toxin was extracted from pGEMεα and ligated with pET22b(+). pET22εα was transformed into E. coli Rosetta strain. Recombinant protein was expressed as a soluble protein after IPTG induction in strain Rosetta. Expression was evaluated using SDS-PAGE. The recombinant protein was purified via Ni-NTA and was analysed using western blot.

**Results:** The recombinant protein after subcloning into the expression vector has been expressed. Our findings revealed that different temperatures and incubation times had significant effects on the expression of epsilon-alpha toxin protein as optimal thermal condition was 37 °C and the highest yield of the recombinant protein was achieved 3h after IPTG induction. Recombinant protein was purified using Ni-NTA.

**Conclusion:** We concluded that recombinant E. coli Rosetta/pET22εα was suitable for expression of recombinant epsilon-alpha fusion protein. The recombinant cell can be used for future research on recombinant vaccine development.

**Keywords:** Alpha toxin, Clostridium septicum. epsilon toxin, Clostridium perfringens, recombinant protein

# P639 - 568: ISOLATION OF SALMONELLA TYPHI CAPSULAR ANTIGEN TY2 AND ANIMAL TESTING IN ORDER TO PRODUCE VACCINES

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**Background and Aim:** Vaccination against typhoid fever patients is one of the fundamental strategies. The aim of this study is isolate salmonella typhi capsular antigen and evaluating its immunogenicity in animal model.

**Methods:** After culturing strains of salmonella typhi Ty2 in mueller-hinton agar medium, the cell suspension prepared in saline and polysaccharide capsule by deposition cetavlon was extracted with an organic solvent. Rate of nucleic acid in the sample by turbidimetrically at a wavelength of 260nm and the amount of protein with SDS-PAGE method and bradford was investigated.Then used immunodiffusion method to verify the authenticity of isolated vi antigen. Finally immunogenicity of vi antigen on rats was investigated.

**Results:** The amount of nucleic acid and protein in the case of isolated was 0.08 and 2.59 micrograms per milliliter, respectively. In SDS-PAGE, band of isolated case was quite similar with the standard samples. Create a sedimentary lines in immunodiffusion, approved the presence of vi antigen. In survey of isolated vi antigen on rats, was created immunity 80 percent. Also injected into rabbits showed that the amount of LPS present in the sample, can not create fever.

**Conclusion:** This method can be used to isolate vi antigen and introduced as it a human vaccine candidate.

**Keywords:** Salmonella typhi, capsular antigen, vaccines

# P640 - 592: DESIGN AND CONSTRUCTION OF SUICIDE VECTOR PBLUESCRIPTSK-GFPΔKANR TO ANALYZE THE GENE DELETION IN THE BRUCELLA MELITENSIS REV1 MUTANT STRAIN

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**Background and Aim:** Brucellosis, a disease caused by the Brucella bacterium, is a common disease between humans and environment. Brucella lipopolysaccharide has the special properties, is one of the most important factors of its survival in host cell. The aim of this study is to design and construct a suicide vector based on GFP reporter, to investigate deletion of kanamycin resistance gene from the O-PS region of Brucella melitensis Rev1 mutant strain.

**Methods:** In this study, pBluescriptSK(-) plasmid was used as a suicide vector to remove target sequence. First, the deletion cassette including the GFP encoding sequence flanked with the target gene upstream and downstream sequences was designed by using the gene bank data. The deletion cassette was syntactically constructed and cloned into the pUC57 vector. Then, for the construction of suicidal vector, the deletion cassette was subcloned into pBluescriptSK(-) vector by restriction enzymes SacI and KpnI.

**Results:** Construction of the synthesized deletion cassette was confirmed by using PCR with specific primers, restriction mapping and DNA sequencing. Subcloning of the deletion cassette in pBluescriptSK(-) and construction of suicide vector pBluescriptSK-GFP?kanR, was confirmed by colony PCR and specific restriction enzymes digestion of the extracted recombinant vector.

**Conclusion:** The suicide vector pBluescriptSK(-)GFPΔkanR including the 500 bp of target gene upstream and downstream sequences , can be used as a specific suicide vector to generate the directed deletion in genome of the Rev1 mutant strain and to replacement its antibiotic resistance function with GFP gene expression.

**Keywords:** Deletion cassette, GFP, kanR, Rev1, suicide vector

# P641 - 653: ESCHERICHIA COLI EXPRESSION AND PROCESS OPTIMIZATION OF EPEX ANTIGEN AS A SUITABLE TARGET FOR THERAPEUTIC VACCINATION

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**Background and Aim:** Introduction The epithelial cell adhesion molecule (EpCAM) is a glycoprotein that is overexpressed on most carcinomas and therefore of potential use as a diagnostic and prognostic marker for a variety of carcinomas. Recently, EpCAM has been identified as an additional marker of cancer-initiating cell thus, the EpCAM extracellular domain (EpEX) antigen might be a suitable target for theraputic vaccination. Escherichia coli is one of the most widely used hosts for the production of recombinant proteins. Here, TRX tag -EpEX fusion protein was expressed in E.coli Origami (DE3). High-level protein expression was accessed after optimization of the culture condition.

**Methods:** A codon optimized gene expressing EpEX vector was cloned in Pet32a (+) vector. The EpEX /Pet32a (+) construct was expressed in the Origami (DE3) E. coli strain. For optimization, cultivations were accomplished under different IPTG concentrations (0.25, 0.5, 1 or 2) and temperatures (16, 25, 30 or 37 °C).

**Results:** Constructed plasmid was approved by sequencing reaction and restriction enzyme analysis. Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) and western blotting using mouse anti-6XHis tag antibody showed an estimated 50 kDa-size protein band corresponding to the recombinant EpEX. The highest EpEX expression level was obtained using with 0.5 mM IPTG at 16 °C for 5 h.

**Conclusion:** These findings indicated the ability of E.coli in the expression of recombinant EpEX which may be used as a potential candidate vaccine in colorectal cancer. Results obtained here showed that inducer concentration and temperature are two major factors affecting the expression level of recombinant proteins.

**Keywords:** EpEX, E. coli, expression, optimization

# P642 - 725: IDENTIFICATION OF ADHESIVE FACTORS IN MULTIDRUG-RESISTANT ACINETOBACTER BAUMANNII

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**Background and Aim:** Acinetobacter baumannii, an opportunistic MDR pathogen, has been frequently isolated from clinical settings. The healthcare and economic impact of A. baumannii infections, particularly in intensive care units, highlighted the urgent need for new diagnostic methods to treat and prevent such infections. In this study we report the role of adhesion factors in pathogenesis of clinical isolates of A. baumannii.

**Methods:** The distribution of adhesive factors was examined by Polymerase Chain Reaction (PCR) in 73 non duplicate clinical isolates of A. baumannii. The virulence factors selected, including Outer membrane protein A (OmpA), ABAYE1319- CsuA/b; fimbrial protein, ABAYE2132- fimbrial protein, ABAYE1859- fimbrial protein; OmpK- fimbrial protein and ABAYE0304- fimbrial protein. The amplified DNA product was investigated with 100 bp size marker (Fermentas, Korea) on 1% agarose gel.

**Results:** The presence of OmpA gene, as well as ABAYE1319, ABAYE2132, ABAYE1859, OmpK and ABAYE0304 (encoding fimbrial protein) was investigated by PCR. All the clinical A. baumannii isolates harbored OmpA and OmpK (97.2%) gene. Frequencies of the genes among 73 A. baumannii isolates were ABAYE2132 (0.014%), ABAYE1319 (0.084%), ABAYE1859 (19.44%) and ABAYE0304 (23.61%).

**Conclusion:** In conclusion, our findings demonstrate that OmpK - fimbrial protein, highly prevalent and conserved antigen, is elaborated in the interaction with living surfaces. Further structural, physiological and genetic studies are necessary to clarify the role of OmpK - fimbrial protein in the pathogenesis of A. baumannii.

**Keywords:** Acinetobacter baumannii, Fimbrial protein, Adhesion, Omp

# P643 - 793: IDENTIFICATION OF THE SEROTYPES OF BACTERIAL MENINGITIS AGENTS; IMPLICATION FOR VACCINE USAGE

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**Background and Aim:** Bacterial meningitis is one of the most serious infections and should be treated as emergency. As it has significant morbidity and mortality throughout the world, every country should have precise information regarding the etiological agents of disease and populations at risk to design public health prevention strategy. In the present study in addition of evaluation of common etiological agents (Haemophilus influenzae, Neisseria meningitidis, and Streptococcus pneumoniae) in bacterial meningitis cases, we serogrouped or serotyped the obtained agents in order to predict the usefulness of existing vaccines against bacterial meningitis.

**Methods:** Cerebrospinal fluid of 182 suspected meningitis patients were collected, from which 114 cases were approved by biochemical, microbiological and molecular tests as bacterial meningitis. The isolated bacteria were serogrouped or serotyped to determine the dominant serotypes.

**Results:** Streptococcus pneumoniae accounted for 36%, Haemophilus influenza for 26% and Neisseria meningitidis for 14% of cases. From 13 serogroups of N. meningitidis, the most frequent serogroups, were meningococcus group B (51%), C (24%) A (18%), Z (2%), W135 (1%) and 3% was not identified. In H. influenzae group only serotype b (100%) have been identified and in pneumococcal meningitis the most common serotype among our cases were 18C (44%) followed by14 (17%), 19A (13%), 6A (9%), 7F (4%), 4(3%), 3 (3%), 9V (2%), 8 (2%), 23f (2%), 5 (1%).

**Conclusion:** Since there is no nationwide mass immunization program for common agents of bacterial meningitis in Iran, the result of this study can be used to improve the existing vaccines to cover the detected serotypes and consequently reduce the incidence of bacterial meningitis.

**Keywords:** Bacterial meningitis, Neisseria meningitidis, Streptococcus pneumoniae, Haemophilus influenzae, Vaccine

# P644 - 965: PREVALENCE OF SERUM ANTIBODIES AGAINST MEASLES, RUBELLA, HBV, CMV AND VZV IN BABOL MEDICAL STUDENTS.

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**Background and Aim:** Measles, Rubella and Hepatitis B are among the vaccine-preventable infectious diseases. Despite vaccination coverage, there is the possibility of sporadic cases and mortality, especially in developing countries. Morever, Herpesviruses including CMV and VZV establish latent infections in their hosts for life. The present seroprevalence study intended to evalute the prevalence of Measles, Rubella, HBV, CMV and VZV in Babol Medical Students.

**Methods:** This cross-sectional study was conducted on 236 students who were randomly selected. After filling out a questionnaire containing demographic information and medical records, 5cc venous blood was collected from each individual and IgG antibody against Measles, Rubella, Anti-HBs, Anti-HBc, HBsAg, CMV and VZV were tested by using ELISA.

**Results:** Of the 236 students enrolled, 155 (65.7%) were female and 81 (34.3%) were males. IgG antibody against measles virus was detected in 123 students (52.11%). This ratio for Rubella IgG antibody was identified in 233 (98.72%). Anti-HBs were recognized in 202 cases (85.6%) and Anti-HBc was positive in only 4 students (1.7%). In addition, all samples were negative for HBsAg. About 96% of the subjects were positive for anti-CMV, of whom 33 (19.3%) were male Also, of 270 samples who tested for VZV IgG, 15.6% were negative.

**Conclusion:** The results showed that the immunity level against Rubella was acceptable, but it seems that the immunity level against Measles is not enough. About 15% of students are susceptible to HBV and VZV; therefore, screening for antibody against aforementioned viruses is recommended before university entrance.

**Keywords:** Prevalence, Measles, Rubella, HBV, VZV, CMVl

# P645 - 970: EVALUATION OF SEROLOGIC TESTS AFTER INJECTION OF BRUCELLOSIS VACCINE STRAIN REV.1 IN SHEEP

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**Background and Aim:** Brucellosis is a major bacterial zoonosis of global importance.The causative organisms are Gram-negative facultative intracellular pathogens that may affect a range of different mammals including man, cattle, sheep, goats, swine, rodents and marine mammals. In most host species, the disease primarily affects the reproductive system with concomitant loss in productivity of animals affected. Brucellosis is an important infectious disease of sheep and goats. B. melitensis is primarily responsible for brucellosis insheep and goats. Brucellosis occurs in small ruminants in the Mediterranean and MiddleEastern countries, particularly Iran, and spreads eastward to southern regions of Russia, Mongolia and northern China. The majority of abortions in sheep and goats occurred in the last month of gestation. They can be of considerable economic importance to the sheep and goat industry.

**Methods:** In this xperimental study the sheeps are used. brucellosis vaccine strain Rev.1 was injected to sheeps the subcutaneous method , And then blood sampling from sheeps was taken on days Ziro, 14, 30, 60, 90, 120, 150, 180 after vaccination. and after getting blood serum, serological tests Wright and 2Me were performed.

**Results:** In the six months that serological tests was performed, Sheeps have an antibody titre and the highest antibody titer was on day 14 and Least antibody titre was 180 day, and most amount antibody titre down happened On the day 60.

**Conclusion:** At least 6 months after vaccination with brucellosis vaccine strain Rev.1, there are antibodies in sheeps blood and after spending this time, it should also be investigated more than six months

**Keywords:** Brucelosis, Rev.1, vaccine

# P646 - 1041: EXPRESSION AND PURIFICATION THE YERSINIABACTIN IRON RECEPTOR OF UROPATHOGENIC ESCHERICHIA COLI ISOLATES AS A TARGET AGAINST URINARY TRACT INFECTION

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**Background and Aim:** Urinary tract infections (UTIs) caused by Uropathogenic Escherichia coli (UPEC) are among the most bacterial infections. Antibiotic resistance reaches the need for alternative approaches such as vaccination against these infections. Iron receptors such as yersiniabactin iron receptor FyuA are among the important virulence factors of UPEC that has the properties of an ideal target against UPECs. Thus, in this study, we expressed the fyuA gene of UPEC isolate and then purified it as a target against UTIs.

**Methods:** The amplification of fyuA in UPEC isolates was performed by using the PCR method. Then, the amplified fyuA gene was cloned and expressed in pET28a-BL21 (DE3) expression system. Purification of the FyuA expressed protein was performed by Ni-NTA columns under the denaturation conditions. Finally, the purification of FyuA was evaluated by SDS-PAGE and Western blot.

**Results:** The fyuA gene was amplified with a size about 1950 bp in PCR. Confirmation the cloning of fyuA gene was done successfully by PCR, double enzyme digestion, and finally sequencing. Then, expression of FyuA was performed in BL21 (DE3) that SDS-PAGE and western blot showed the high purity of the eluted FyuA on column. The approximate size of the purified FyuA was 69 KD.

**Conclusion:** There is currently no effective vaccine available for UPEC; therefore, an ideal against UTIs is urgently required. Iron uptake receptors could be among the considerable vaccine candidates against UPECs that efficacy some of them were evaluated against UTIs. In our study, we purified FyuA protein of UPEC to evaluate it as a vaccine target.

**Keywords:** Urinary tract infection, Uropathogenic Escherichia coli, FyuA, vaccine, purification

# P647 - 1042: CLONING AND PURIFICATION THE FLAGELLIN (FLIC) PROTEIN OF PROTEUS MIRABILIS ISOLATES AS AN ADJUVANT IN VACCINES AGAINST URINARY TRACT INFECTION

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**Background and Aim:** Proteus mirabilis strains are frequently associated with urinary tract infection, particularly in patients with urinary catheterization. Flagellin (FliC) is the major structural component of flagella in P. mirabilis. Studies showed that flagellin is able to activate innate immune responses via activation of Toll-like receptor 5 (TLR-5). In this study, we amplified the fliC of P. mirabilis as a vaccine adjuvant and then expressed it in prokaryotic host.

**Methods:** The FliC sequence was obtained from Genebank. The fliC was amplified by PCR reaction by using the primers designed. Then, the fliC gene was cloned and expressed in pET28a-BL21 expression system. Finally, purification of the expressed protein was performed by nickel resins according to the manufacturers and confirmed by SDS-PAGE and Western blot.

**Results:** The PCR reaction showed the amplified fliC with a size about 1100 bp. Cloning of fliC gene was confirmed by PCR reaction, enzyme digestion, and sequencing. Then, expression of Flagellin was performed and confirmed by SDS-PAGE and Western blot with anti-His tag antibody. The size of this protein was approximately 43 KD.

**Conclusion:** Development of effective adjuvants such as native adjuvants has become an important goal in vaccines. Flagellin by activation of innate immune responses could be one of the adjuvants. In our study, we successfully expressed and purified flagellin of P. mirabilis strains to evaluate it as an innate adjuvant in vaccines. Evaluation of the efficacy of this adjuvant against UTIs is in progress.

**Keywords:** Flagellin, P. mirabilis, urinary tract infection, TLR-5, vaccine, adjuvant

# P648 - 1048: EFFICACY OF WHOLE CELL PNEUMOCOCCAL VACCINE IN MICE: A SYSTEMATIC REVIEW

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**Background and Aim:** Although a number of original articles have been published on protection of whole cell pneumococcal vaccine in mice in recent years, there has not been a systematic review of these data. Therefore, we decided to summarize the results of original articles that have been published on protection of whole cell pneumococcal vaccine in mice. A systematic review of animal studies can provide accurate results than results from single animal studies. Our aim of this work is to obtain the best choice for type of vaccine inoculation, number of inoculation, adjuvant and doses of vaccine.

**Methods:**"Whole cell vaccine" AND "Streptococcus pneumoniae" were searched in PubMed, Google Scholar, Embase, Web of Science and Scopus engines. We sought any experimental articles that examined the protection of whole cell pneumococcal vaccine in animal model. For all studies, we extracted the following data from the original publications. The 3Rs principle was considered by all of original articles in use of animals in their study.

**Results:** A total of 654 articles were achieved by literature search using key terms from the databases. After exclusion based on title not relevant and duplicates, 34 articles were retrieved for detailed full-text evaluation. Finally, ten studies addressing the protection of whole cell vaccine against S.pneumoniae were included.

**Conclusion:** The best protocol for use of WCV is that this vaccine has been applied with CT adjuvant by intranasal route in 3 inoculations at weekly intervals in doses $10^8$ CFU.

**Keywords:** Streptococcus pneumoniae, whole cell vaccine, pathogen, disease, unencapsulated

# P649 - 1124: CHARACTERISTIC HOMOGENEITY WITHIN IRANIAN MYCOPLASMA AGALACTIAE VACCINE STRAINS OF TALIQAN, LORESTAN AND SHIRAZ REVEALED BY MOLECULAR GENOTYPING

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**Background and Aim:** Iran continues to stand first among countries with highest annual number of agalaxy epidemics in ruminant herds.The three local strains of Shiraz, Lolestan and Taliqan have been used for many years in preparation of the only commercially available killed vaccine against Agalaxy in the Iranian market.

**Methods:** The present study was aimed to optimize VNTR method on the basis of VNTR 5 ، VNTR 14 ،VNTR 17 and VNTR 19 loci in order to molecular typing of Mycoplasma agalactiae for the first time.

**Results:** A comparison of the sequences of our isolate with the standard strains indicated the presence of polymorphism in these loci.

**Conclusion:** Achievement of a common PCR protocol, which is able to proceed simultaneously four different reactions in one PCR run, was the primary outcome of this research.

**Keywords:** Characteristic homogeneity within Iranian Mycoplasma agalactiae vaccine strains of Taliqan, Lorestan and Shiraz revealed by molecular genotyping

Microbiomes

## P650 - 29: MULTIPLE SCLEROSIS AND MICROBIOME: ARE THEY CONNECTED ?

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**Background and Aim:** Human intestine contains extremely different microorganisms that they all together have made an ecologic community called "Gut Microbiome". There are a large number of researches investigating the role of microbiome in diseases and vice versa and also the interaction between this two. The role of composition of gut microbiome on immunopathogenesis of Multiple Sclerosis (MS) has been recently well studied. In this review we have examined the literature to organize our knowledge about role of gut microbiome on MS.

**Methods:** We have searched the PubMed databases comprehensively and accurately to find peer reviewed articles regarding gut microbiome and its role in MS. Also we put meeting abstracts under precise consideration.

**Results:** In the reviewed articles there are strong evidences regarding different gut microbiome of MS patients compared to healthy controls. Also these articles have proposed different mechanisms to explain the link between changed gut microbiome and MS pathogenesis. In this review we have discussed these mechanisms and also the implication of these findings in treatment of MS patients.

**Conclusion:** This review uncovers the potential links between MS and gut microbiome and the potential therapeutic strategies for MS treatment. We also highly recommend further investigations in this emerging research area.

**Keywords:** Multiple Sclerosis, Microbiome, Gut, Intestinal microbes

# P651 - 39: DISREGARDED BUT VALUABLE: NEURODEGENERATION IS IN CLOSE RELATIONSHIP WITH MICROBIOTA.

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**Background and Aim:** Trillions of commensal microbes live in and on our body, and constitute an ecologic community called "Microbiome". The vast majority of these microorganisms are living in the gut, where they perform important functions for body's health and survival. Despite wide-ranging clinical and biomedical research, the causes, stages, and treatment of most Neurological Disorders (NDs) remained unknown. There are many recent studies discussing the complex and diverse connections between the Gut Microbiome (GT) and the Central Nervous System that form the GT-brain axis. So, it is not unexpected that the axis be involved in causing and development of NDs including: Alzheimer's, Parkinson's, and Multiple Sclerosis diseases. In this review we have examined the literature to organize our knowledge about role of GT on NDs.

**Methods:** We have searched the PubMed databases comprehensively and accurately to find peer reviewed articles regarding GT and its role in NDs. We studied them carefully and selected the most prestigious and the most recent of them to ensure that all knowledge on this topic is discussed.

**Results:** In the reviewed articles there are strong evidences regarding different GT in NDs compared to healthy controls. In this review we have discussed these differences and also the implication of these findings in treatment of NDs.

**Conclusion:** This review uncovers the potential links between GT and ND. The data outlined herein provide an encouraging roadmap toward important new medicines and companion diagnostic platforms in a wide range of therapeutic indications. We also highly recommend further investigations in this emerging research area.

**Keywords:** Microbiota, Neurodegeneration, Neurological Disorders, Intestinal Microbes

# P652 - 77: PREVALENCE OF DICROCOELIUM DENDRITICUM PARASITES IN THE LIVERS OF SLAUGHTERED LIVESTOCK IN THE SLAUGHTERHOUSE OF DEZFUL IN 2015

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**Background and Aim:** Dicrocoelium dendriticum is a trematode with global expansion. Adult worms live in mammals bile bag and basically Ruminantia. But human accidentally becomes infected. The high prevalence and economic losses by the Dicrocoliasis makes it as one of the six major helminth infections in ruminants world to know. According to clinical significance and zoonotic parasite, the researchers decided to investigate the prevalence of this parasite.

**Methods:** This study was cross-sectional study of all livestock slaughtered in industrial slaughterhouse of Dezful. How to detect these parasites is the diagnostic protocol of Veterinary Office. Livestock that were not recorded in the Veterinary Office, Were omitted from the study. Data were extracted and analyzed by SPSS statistical software.

**Results:** According to the study, 47542 head of cattle have been slaughtered in 2015 in the city of Dezful. Of these, 33 cases were reported Infected. A total of 18 head of infected livestock were cow and calf, And also nine buffaloes, four sheep and two goats were infected.

**Conclusion:** Prevalence of Dicrocoelium in Dezful was significantly lower than other parts of Iran. This is despite the fact that the weather conditions for this area, we expected a higher frequency and reasons for this low prevalence are considerable.

**Keywords:** Prevalence, Dicrocoelium dendriticum, livestock, Dezful

# P653 - 88: A REVIEW STUDY OF VIRAL INHIBITORS OF IFN-Γ-JAK–STAT SIGNAL TRANSDUCTION AND INDUCTION OF MHC CLASS II GENE EXPRESSION

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**Background and Aim:** Binding of IFN-γ at the cell surface promotes phosphorylation of Janus kinases (Jak) 1and 2, and of the receptor subunits R1 and R2, providing a docking site for STAT1 and leading to STAT1 phosphorylation and dimerization. Finally, activation of the STAT1 Leads to the production class II trans activator (CIITA) that can induce MHC class II gene expression.

**Methods:** In this review key words of cell surface promotes phosphorylation of Janus kinases and abstract reviews various studies related to the inhibition of MHC II gene expression by different viral proteins in search engines and databanks, including Google Scholar, Elsevier Sciences, and PubMed were searched.

**Results:** Researches indicate, the vaccinia virus encoding the VH1 protein and causes dephosphorylation of activated STAT1. The hepatitis C virus core protein decreases STAT1 expression. Some evidence suggests that unknown protein encoded by the ebola virus interferes before STAT1 dimer formation. Also BZLF-1 protein produced by the Epstein – Barr virus, can reduce the level of transcription IFN-R1 gene. As well as E1A adenoviral protein can inhibit signaling pathway in different ways, including Reduction in IFN- R2 levels; inhibition of function of STAT1 when bound by E1A, decrease in STAT1 levels; inhibition of general transcription.

**Conclusion:** Historically , viruses have evolved to along with the immune system ,So that we see different viral proteins conflicting with the immune system. Identify and understand the function of these proteins , determines the mechanism of pathogen virulence and consequently will lead to the design of appropria tetreatment procedure.

**Keywords:** MHC, IFN-γ, gene expression

# P654 - 89: BIOINFORMATIC ANALYSIS OF TIG PROTEIN IN LACTOBACILLUS FERMENTUM

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**Background and Aim:** Lactobacillusfermentumis associated with active dental caries lesions. A few strains are considered probiotic. It has been shown to assist folding in two ways: by protecting nascent chains with longhydrophobic stretches during synthesis and initial folding stages, and by accelerating peptidyl-prolylcis-trans isomerization (PPI). Depending on the length and hydrophobicity of the nascent chain, several trigger factor molecules may bind to different regions of the same polypeptide as it comes off the ribosome. In vivo, the absence of trigger factor can be partially compensated for by the DnaK/DnaJ chaperone complex, but deletion of both is lethal. In solution, it exists as a monomer or a dimer in equilibrium.

**Methods:** In study protein sequences of trigger factor were earned from uniprot database and for bio informatics studies we got help from some online soft wares likeTMHMM, ProtScale, Psipred, SWISS-MODEL and etc.

**Results:** As this protein involved in protein export, it can acts as a chaperone by maintaining the newly synthesized protein in an open conformation. It also can functions as a peptidyl-prolylcistrans is omerase. So we decided to work on its protein properties via bioinformatics.

**Conclusion:** Based on the results, this protein was cytosolic, and its theoretical PI was 4.32. And regarding to estimated half-life: The N-terminal of the sequence considered was Met. The estimated half-life was>10 hours.

**Keywords:** Bioinformatics, Analysis, Lactobacillus

# P655 - 90: EVALUATION OF A DIFFERENT FREQUENCY MAGNETIC FIELD ON THE GROWTH AND METABOLIC CHANGES IN SOME GRAM-POSITIVE AND GRAM NEGATIVE BACTERIA IN VITRO

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**Background and Aim:** A complex network of sensing and responding to chemical factors is used by living cells to communicate with each other and survive under different environmental Conditions. It was suggested that electromagnetic irradiation (EMI) at specific resonant frequencies can affect bacteria in the manner of energy transformation into informative signals.

**Methods:** Ten electronic databases were searched during 2005-20116. The reference lists of relevant articles were checked and various health services research-related resources consulted via the internet. Selected studies were assessed, data extracted using a standard template, and quality assessed using an adaptation of published criteria. Because of the Microbiological regarding populations, outcomes and study type, meta-analyses were not undertaken and the results are presented in tabulated format with a narrative synthesis of the results.

**Results:** Low-intensity electromagnetic irradiation of 70 to 150 Hz frequencies was studied on Growth Inhibition of Escherichia coli ,Staphylococcus aureus ,Staphylococcus epidermidis, Pseudomonas aeruginosa, Kellebsiella pneuomonae , Bacillus subtilis, Salmonella typhi and Salmonella enterica. Analysis showed a change in the oxidation–reduction state of bacterial cell membrane proteins, modifications in the pH or the production and transport of additional biocide ions by an electrophoretic process or the production of free oxygen by electrolysis.

**Conclusion:** According to studies, magnetic field, creating metabolic changes in the bacteria and have antibacterial effects on bacteria.

**Keywords:** Magnetic field, Gram-positive, Gram-negative, metabolic changes

# P656 - 217: EPIGENETIC MODIFICATION OF ALLERGIC ASTHMA BY GUT MICROBIOTA

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**Background and Aim:** Asthma is a highly prevalent chronic disease extremely affects quality of life. Allergic asthma initiates from immune deregulation in early infantile. Role of gut microbiota on asthma initiation and development has been discovered. Also impact of epigenetic mechanisms in regulation of asthma has been reported. In this article, intestinal microbiome impact on epigenetic modulation of allergic asthma has been reviewed.

**Methods:** Articles between years 1965 and 2016 were searched and studied precisely in medline. The key words "asthma, epigenetic and gut microbiome" were used. The associated articles were studied and summarized.

**Results:** Intestinal microbiota is a reservoir of epigenetic constituents. Gut microbiota containing high fibre suppresses expression of certain genes in fetal lung lead to inhibition of airway responses in asthmatic patients. Moreover commensal gut microbes produce epigenetically modifiers including short chain fatty acids affect asthma development. Also probiotic bacteria, could induce production of some metabolites including short-chain fatty acids acetate regulate the methylation of gene promoters and histone acetylations in macrophages/ regulatory T cells suppress intestinal inflammation. Besides numerous epigenetic factors present in gut like early infancy enteroviruses, nutrients and contact to air contaminants have adverse epigenetic effects on immune system could exacerbate asthma.

**Conclusion:** The gut microbiota, as part of epigenetic location, has an intensive effect on intestinal immune system and plays an important role in immunopathogenesis of asthma. Therefore adaptation of gut microbiome profile and products including lipopolysaccharide, alimentary interventions and probiotic bacteria might be efficient epigenetic-mediated modulation of immune cells and could be a potential therapeutic strategy in asthma.

**Keywords:** Asthma, epigenetic, gut, microbiome

# P657 - 260: DIAGNOSIS OF BURDETELLAPERTUSIS&PARAPERTUSISFROM COLLECTING SAMPLEHOSPITALS QAZVIN PROVINCE IN 3 TIMES&COMPARISON WITH TOGETHER.

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**Background and Aim:** Introduction and Objectives:The etiologic agent of whooping cough or pertussis is agram negative bacillinamed Bordetella.B.Pertusis is a human phatogen incriminated in the majority cases of whooping cough. A common child hood infection B.Parapertusis is also occasionally found in whooping cough (these organisms colonize mucous membranes of throat and nasophary ,area and by producing various toxins) the characteristic clinical manifestation of the disease predominatly coughing and cyanosis starts. Choronicstages of disease lasts for several days to weeks. The aim of this study was epidemiologic survey on clinical specimens collected from hospitals Qazvin province in 3 times &comparison with together.

**Methods:** Materials and Methods:In a retrospective descriptive cross sectional studyby Dacrons samples taken from nose of children a mean age 3.0 years in 3 times A:1391 B:1390 C:1389.The swabs transferred to transport media and send to the Pasteur Ins.

**Results:** In 1391from 47 samples totally 2 cases were positive PCR with culture in 1390from 30 cases1case was positive PCR with 1positiveculture for B. pertusis and in 1386 to 1387 from 38 samples totally 1case was positive.

**Conclusion:** Comparison between 3 period were not difference. Therefore mass vaccination for pertussis (DPT) during last decades results total control in children in adults, and youngest how everthe disease could be observed sporadically that may transmit to neonants and predisposed childs.

**Keywords:** B. pertusis, whooping cough, neonants, vaccination

# P658 - 261: INVESTIGATION EPIDEMIOLOGY IN SILENT CARRIERS OF MALARIA IN 800 EMIGRANTS AND COMPARISON THOSE WITH IRANIAN PATIENTS IN DURING 10 YEARS IN NEONATS OF QAZVIN CITY

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**Background and Aim:** Malaria is the most dangerous &the killest diseases due to plasmodiums in spieces of protozoa.

**Methods:** In this cross-sectional and prospective study evaluate at first compare Iranian patients with emigrants.

**Results:** In Iranian as control (tourists)IP=PP actually clinical and paraclinical appeared together but in 800 emigrants 4 patient (0.5%) were resistant on the other.

**Conclusion:** Thus in this invidual presentation patients resistant are very dangerous because the agents ( Gamets) of malaria transfer by mosquito (Anophel) .

**Keywords:** Silent Carriers, Neonats, Malaria, Emigrants

# P659 - 399: MOLECULAR DETECTION OF GUT BACTERIA LACTOBACILLUS, BIFIDOBACTERIA, CLOSTRIDIUM DIFFICILE AND YEAST IN BOWEL DISEASE AND CONTROL PATIENTS

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**Background and Aim:** Two kinds of intestinal disorders included inflammatory bowel disease and irritable bowel syndrome have a strong negative effect on quality of lifein patients and impose economic costs. Dysbiosis in gut microbiota is one of the important factor in IBD and IBS

**Methods:** Fecal samples were obtained from 9 IBS patients, 11IBD patients and 17 healthy subjects. Oral samples were obtained from from patients, too. Fecal samples were cultured to isolate yeasts and were analyzed by polymerase chain reaction to detection of Bifidobacterium spp, Lactobacillus spp, and Clostridium difficile.

**Results:** The PCR analysis of fecal samples revealed a decrease in the level of Bifidobacterium spp. and Lactobacillus spp. in patients, whereas no decrease were observed in healthy subjects. While there was an increase in the level of Clostridium difficile in patients compared to healthy subjects and no yeast can be isolated from healthy subjects.

**Conclusion:** Decreased Bifidobacterium spp. and Lactobacillus spp. in fecal samples of patients, increased yeasts and Clostridium difficile in patients compared to healthy subjects indicated a role of microbiotic composition in IBS and IBD pathophysiology.

**Keywords:** Inflammatory bowel disease, Irritable bowel syndrom

# P660 - 410: THE ANTIBACTERIAL AND ANTIFUNGAL ACTIVITY OF LEAVES AND FRUITS OF HYOSCYAMUS SENECIONIS WILLD.

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**Background and Aim:**. Hyoscyamus senecionis belonging to solanaceae family is well known for its alkaloid as secondary metabolites. Hyoscyamine and scopolamine as two major components of this species are medicinally important.

**Methods:** H. senecionis was collected from kashan. Air-dried grounded Leave and fruit samples were extracted separately by soxhlet apparatus for 8 hours using methanol. Determination of antimicrobial activities of dried H. senecionis extracts were accomplished by agar disk diffusion method. We studied 8 strain bacteria and 2 fungi and 1 yeast. The extracts were studied for their minimal inhibition (MIC) and then minimal bactericide concentration (MBC) was determined for sensitive strains. Gentamicin and Rifampin were examined as positive controls and DMSO as negative control. Each assay was repeated twice.

**Results:** The methanol extract from leaves and fruit of Hyoscyamus senecionis showed activity against Staphylococcus epidermis and Bacillus subtilis. The samples showed moderate antimicrobial activities with inhibition zone diameter from 10 to 11 mm for leaves and 9 to 10 mm for stems. The fruit extracts exhibited activity against the tested microorganisms with MIC and MBC of 62.5 ?g/ml and 500 ?g/ml respectively. The range of MIC value for leaves was 62.5-250 ?g/ml and MBC was 2000 ?g/ml. Antifungal activity did not observe for studied extracts.

**Conclusion:** Hyoscyamus species are important as a narcotic drug historically, while there are a non-alkaloid constituents in this genus that possessing antimicrobial activity.

**Keywords:** Antimicrobial activity, Hyoscyamus senecionis, Plant extract

# P661 - 445: INVESTIGATING THE EFFECTS OF PROBIOTICS SUPPLEMENTATION ON LIPID PROFILE AND INFLAMMATORY BIOMARKERS IN PATIENTS WITH METABOLIC SYNDROME (REVIEW OF HUMAN STUDIES)

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**Background and Aim:** Probiotics are the group of live microorganisms and when they exist abundantly in the gut, could lead to health promotion. Studies represented that the composition of gut micro-flora in humans is different that could be a root for a myriad of pathogenic and health mechanisms. In the present study we investigated the effects of gut micro-flora on lipid profile and inflammatory biomarkers in patients with metabolic syndrome (MetS).

**Methods:** This study was conducted to determine the effect of probiotic supplementation on lipid and inflammatory profile in patients with MetS, and written by investigating scientific sources and papers in authentic journals and databases like scholar.google.com, pubmed.com, sciencedirect.com and Iranian website including sid.ir. Finally, 20 papers published between 2000 and 2016 were collected and reviewed.

**Results:** In surveyed studies, the effects of probiotics as capsule against placebo was evaluated, that there was no study, except for one, indicating the significant effects on decreasing LDL-c, TG and total cholesterol, increasing HDL-c or ameliorating inflammatory biomarkers like hs-CRP, IL-6 and TNF- α, compared with control group. Probiotics combined with omega-3 was bound to HDL-c elevation and hs-CRP reduction. Moreover, probiotic supplementation with weight-loss diet compared with placebo with weight-loss diet resulted in significant weight lost only in women.

**Conclusion:** According to the outcomes, against the huge amounts of advertisements on probiotic supplements, it is probable that it may not be sufficient effective on controlling lipid and inflammatory profile. It has been suggested designing study in future on effectiveness of probiotic supplements combined with prebiotics and/or weight-loos diets.

**Keywords:** Probiotics, Lipid Profile, Inflammatory Biomarkers

# P662 - 559: ANTIMICROBIAL EFFECTS OF SEEDS AND STEMS OF HYOSCYAMUS SENECIONIS WILLD.

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**Background and Aim:** Nowadays medicines which derived from plants are in the spotlight. Hyoscyamus senecionis belongs to solanaceae family and its antispasmodic, analgesic, antipyretic and anticholinergic effects have been proven. The aim of this research is studying its antibacterial effects.

**Methods:** Plant samples collected from Kashan region. The stems and seeds dried in suitable condition and extraction was done using soxhlet and high-grade methanol. Antimicrobial effects of extraction surveyed on 8 bacteria strain and 1 yeast by agar disk diffusion method. Gentamicin and Rifampin were examined as positive controls and DMSO as negative control. Each assay was repeated twice.

**Results:** The antibacterial effect of seeds methanolic extraction on studied gram positive bacteria (Bacillus subtilis, Staphylococcus aureus, and Staphylococcus epidermis) was proved. The stem extract did not demonstrate antibacterial effect. The seeds extract showed zone of inhibition against B. Subtilis (9 mm), S. aureus (13 mm) and S. epidermis (11 mm). The minimum inhibitory concentration (MIC) was 62.5-500 and the minimum bactericide (MBC) was 500-2000< ?g/ml.

**Conclusion:** Considering the fact that most studies have focused on the effect of the alkaloid in this species, the results of this study determined the antibacterial effects of this plant especially in seeds.

**Keywords:** Antibacterial effects, Hyoscyamus senecionis, Seed, Stem

# P663 - 663: INTRODUCE OF TWO IMPORTANT BACTEROIDES SPP. DERIVED OUTER MEMBRANE VESICLES (OMVS) AS ALTERNATIVE PROBIOTIC CANDIDATES

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**Background and Aim:** The gastrointestinal tract colonized by a complex microbial community that refer as gut microbiota. Bacteroides spp. Have significant role in gut microbiota- host interactions by various mechanisms including outer membrane vesicles (OMVs). Bacteroides spp. OMVs have significant roles in gut microbiota homeostasis and immune system regulations. In present study we extracted and compared B. fragilis and B. thetaietomicron derived-OMVs as alternative probiotic candidates.

**Methods:** B. fragilis ATCC 23745 and B. thetaiotaomicron ATCC 10774 were grown on BHI broth supplemented with hemin and menadione to harvest massive biomass for OMVs extractions. By using multiple centrifugation and tris- ethylene diamine tetra acetic acid (EDTA) -Sodium deoxycholate buffers bacterial OMVs were extracted. In order to comparison Bacteroides spp. OMVs, the average diameters, the protein content and profiles LPS content of OMVs were assayed by using Scanning electron microscopy (SEM) Nanodrop and LAL test respectively.

**Results:** The diameter range of OMVs were 30-110 nm. In the same OMVs extraction conditions B. thetaietomicron produced more OMVs than B. fragilis. Our results based on SDS-PAGE showed that B. fragilis and B. thetaietomicron dervied-OMVs have different protein profile. Also LAL test demonstrated greater endotoxin unit of B. fragilis derived-OMVs (0.99 EU/mL) than B. thetaietomicron OMVs (0.89 EU/mL).

**Conclusion:** According to the dominant role of gut microbiota derived OMV , characteristics of these two Bacteroides spp. derived-OMVs and controversial probiotics administration to modulate host functions in distrupted gut barrier, we propose Bacteroides spp. derived-OMVs application as alternative probiotic candidates for host functions improvement.

**Keywords:** Gut microbiota, B. fragilis, B. thetaietomicron, outer membrane vesicles, probiotic

# P664 - 695: THE FIRST REPORT OF AKKERMANSIA MUCINIPHILA AND FAECALIBACTERIUM PRAUSNITZII ABUNDANCE IN OBESE IRANIAN POPULATION

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**Background and Aim:** Intestinal anaerobic commensal bacteria such as Akkermansia muciniphila and Faecalibacterium prausnitzii due to their beneficial properties are very attractive to be considered in host metabolism. Since, gut microbiota pattern changes based on different criteria including ethnic, diet, lifestyle, age, and gender, we studied A. muciniphila and F.prausnitzii abundance in Iranian obese and normal weight subjects for first time.

**Methods:** Fifty-four normal and obese subjects recruited and classified based on body mass index (BMI).In order to determine the relative abundance of A. muciniphila and F. prausnitzii, stool samples were collected. Following DNA extraction from samples, qPCR was conducted based on 16s rDNA universal primers. The bacterial abundance was calculated based on standard curve derived from Escherichia coli standard strain.

**Results:** The normal weight subjects showed the highest of A. muciniphila abundance compare to overweight and obese Iranian subjects (P-Value= 0.042). The abundance of F. prausnitzii did not elevate significantly in parallel with BMI increase (P-Value= 0.41). A. muciniphila abundance significantly reduced during age increase (P-Value= 0.045). The same results were not seen about F. prausnitzii (P-Value= 0.173). Also, abundance of these bacteria did not have significant differences between both genders of Iranian populations.

**Conclusion:** Because of the importance of A. muciniphila and F. prausnitzii abundance in obesity development, determination and targeted restoration of gut microbiota pattern could be valuable in the obesity treatment.

**Keywords:** Gut microbiota, Akkermansia muciniphila, Faecalibacterium prausnitzii, metabolic syndrome and obesity

# P665 - 742: ISOLATION OF AKKERMANSIA MUCINIPHILA AND FAECALIBACTERIUM PRAUSNITZII FROM STOOL SAMPLES OF IRANIAN PEOPELS

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**Background and Aim:** The gastrointestinal tract colonize by a various and complicated microbial community that refer as gut microbiota. The gut microbiota affect host functions in various aspects including energy homeostasis, immune response and metabolism. Akkermansia muciniphila and Faecalibacterium prausnitzii are two important anaerobic members of gut microbiota that have significant role in modulation of host function. According to determinative role of these bacteria in health and diseases, we isolated them from Iranian people for first time.

**Methods:** In this study 50 stool samples of Iranian people were collected. Stool samples were suspended in anaerobic ringer containing L-cystein. Proper concentration of this solution were inoculated in PYG-mucin agar and PYG agar for isolation of A. muciniphila and F. prausnitzii respectively. This media were incubated at 37 ° C under anaerobic conditions provided 80% N2, 10% Co2 and 10% H2 for 3-7 days. In next step morphology of these bacteria were studied. Finally, DNA of isolated bacteria were extracted and confirmed by PCR based on 16s rRNA primer.

**Results:** 16 A. muciniphila and 11 F. prausnitzii were isolated from 50 stool samples. A. muciniphila and F. prausnitzii were identified as cocobacill-gram negative bacteria and filamentous bacilli- gram variable bacteria respectively. 350 bp DNA band of A. muciniphila and 270 bp DNA band of F. prausnitzii were detected by electrophoresis.

**Conclusion:** Since A. muciniphila and F. prausnitzii have determinative role in host functions, these bacteria consider as biomarker in health and diseases. So that isolation and determination of these bacteria in gut microbiota are valuable.

**Keywords:** Akkermansia muciniphila , Faecalibacterium prausnitzii and gut microbiota

# P666 - 762: COMPOSITION OF GUT MICROBIOTA IN PEOPLE WITH TYPE II DIABETES

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**Background and Aim:** It is known that type 2 diabetes (T2D) in humans could be linked to the composition of gut microbiota. Previous studies investigated some species of intestinal microbiota in diabetic patients. However, scientific data for other important species are still limited. The aim of this study was to evaluate and compare three faecal bacterial species, including Bacteroides fragilis, Bifidobacterium longum and Faecalibacterium prausnitzii in patients with T2D and healthy individuals.

**Methods:** This case control study included 18 patients with T2D and 18 matched non-diabetic subjects as controls. The concentrations of B. fragilis, B. longum and F. prausnitzii were determined by quantitative Real-Time PCR (qPCR).

**Results:** Quantitative PCR analysis revealed that the gut bacterial composition in diabetic patients was partially different from that in the healthy individuals. F. prausnitzii was significantly lower in the diabetic patients compared to healthy people (P- value=0.038). B. fragilis was under-represented in the microbiota of the diabetic group, but its difference between two groups was not significant (P-value =0.38). No difference was observed for B. longum community between the both groups (P-value =0.99) by Real-time PCR.

**Conclusion:** Characterization of specific species of intestinal microbiota shows some compositional changes in patients with T2D. The results may be valuable for developing strategies to control metabolic diseases such as T2D by modifying the intestinal microbiota. Long-term studies with emphasis on other bacterial groups are suggested to clarify and confirm the association of T2D with gut microbiota.

**Keywords:** Gut microbiota, Type 2 diabetes, Real-time PCR, Bacteroides fragilis, Bifidobacterium longum, Faecalibacterium prausnitzii

# P667 - 799: COMPARISION OF CHANGES ENTEROCOCCUS FAECALIS IN PATIENTS WITH POLYPS AND COLON CANCER WITH NORMAL PEARSONS

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**Background and Aim:** Colorectal cancer (CRC), also known as large bowel cancer, is one of the most common forms of cancerand the third most common cause of cancer mortality in the world. . Bacterial metabolites produced in the bowel are potentially related to the genesis of colorectal cancer. Enterococcus feacalis is a group of commensal microorganisms of the human intestinal tract that produces substantial extracellular superoxide, and derivative reactive oxygen species such as H2O2 and hydroxyl radical, throughout oxidation of membrane -associated demethyl menaquinone. These oxidants may be important as a cause of chromosomal instability (CIN) associated with sporadic adenomatous polyps and colorectal cancer.

**Methods:**of the colonscopy,30 stool sample from each colon cancer patient, people with colon polyps and healthy people are collected. After DNA extraction from each fecal sample by kit is done and using the method Real Time PCR the number and percetage of E.faecalis is determined and compared between the three group.

**Results:** The relative abundance of Enterococcus faecalis were found to be significantly higher in healthy volunteers than CRC patients.

**Conclusion:** E. faecalis increased in the feces of colon cancer patients. These shifts in the colonic bacterial population could potentially lead to epithelial cell damage and increased turnover and may be a factor leading to colon cancer.

**Keywords:** Colorectal cancer, polyps, Enterococcus faecalis

# P668 - 801: COMPARISION OF LACTOBACILLUS ACIDOPHILUS AND LACTOBACILLUS PLANTARUM CHANGING IN PATIENTS WITH POLYPS AND COLON CANCER WITH NORMAL PERSONS

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**Background and Aim:** There is growing evidence that the complex gut microbiota community plays an important role in the development of intestinal tumorigenesis. Gut bacteria are an important component of the microbiota ecosystem in the human gut. Gut bacteria play an important role in human health, such as supplying essential nutrients. Lactobacillus is the main lactic acid bacteria found in the human intestine. it has been suggested that lactic acid bacteria used to ferment dairy products have an inhibitory effect on the colon cancer(CRC). The vast majority of polyps on histological examination were of two types, either adenomatous or metaplastic. There is much clinical evidence that the vast majority of carcinomas of the large bowel arise from adenomas. Adenomas are the most prevalent of polyps Colon are the underlying tumors of the colon.

**Methods:** Of the colonoscopy patients, 30 healthy people and 30 people with CRC and 30 people with colon polyps are stool samples. DNA Extraction is done and using the method Real Time PCR The number of bacteria is determined. The number of Lactobacillus was compared between the three groups.

**Results:** The relative abundance of Lactobacillus acidophilus and Lactobacillus plantarum were found to be significantly higher in healthy volunteers than CRC patients.

**Conclusion:** Probiotics by reducing the fecal concentration of enzymes and reducing the absorption of harmful membranes that is responsible for CRC They play an effective role in preventing the disease. Probiotics in particular, lactobacillus acidophilus, reduce the level of enzymes that cause cancer.

**Keywords:** Colon cancer, polyp, Lactobacillus acidophilus, Lactobacillus plantarum

# P669 - 884: ANTIBACTERIAL EFFECT OF ESSENTIAL OIL, AQUEOUS AND ALCOHOLIC EXTRACT OF FERULAGO ANGULATA ON STAPHYLOCOCCUS AUREUS GROWTH ISOLATED FROM SUBCLINICAL MASTITIS, IN VITRO STUDY

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**Background and Aim:** Staphylococcus aureus is one of the important causative agents in mastitis. The purpose of this study was determination antimicrobial effect of Ferulago angulata and different common therapeutic antibiotics on growth of Staphylococcus aureus isolated from subclinical mastitis cases.

**Methods:** In this Study the antibacterial effect of Ferulago angulata essential oil, aqueous and alcoholic extract on growth of Staphylococcus aureus was done and comparted with common therapeutic antibiotics such as tetracycline, erythromycin, kanamycin and gentamicin by diffusion disk method. Minimum Inhibitory Concentration and Minimum Bactericide Concentration were tested through tube standard method.

**Results:** Anti-bacterial effect of essential oil and ethanoic extract was increased by dose-dependently. 40mg/ml extract and 20% essential oil are the highest dose with anti-bacterial effect. Extract of Ferulago angulata has maximum antibacterial activity on the growth of S. aureus.

**Conclusion:** Ferulago angulata had remarkable anti-bacterial effect on Staphylococcus aureus growth isolated from subclinical mastitis cases. In comparison Ferulago angulata essential oil was more powerful than extract. Regarding the fact that antibiotic resistance is growing, Ferulago angulata as an herbal plant with anti-bacterial effect could be used in Staphylococcus aureus isolated from subclinical mastitis cases.

**Keywords:** Subclinical Mastitis, Staphylococcus aureus, Ferulago angulata, Antibacterial effect

# P670 - 964: THE INTRODUCTION OF BACTEROIDES FRAGILIS OUTER MEMBRANE VESICLES AS NEW OBESITY TREATING CANDIDATES: FOCUS ON IMPROVEMENT OF FASTING-INDUCED ADIPOSE FACTOR AND TIGHT JUNCTIONS EXPRESSION IN CACO-2 CELL LINE

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**Background and Aim:** Increased gut barrier permeability (decreased ZO-1 and occludin) and fat deposition occur during obesity. Fasting-induced adipose factor (FIAF) that peroxisome proliferator-activated receptors (PPARs) control its expression, regulate fat deposition. Also gut microbiota-host interaction has determinative role in obesity. The gut microbiota employ various strategy to modulate host function including extracellular vesicle production. We evaluated the B. fragilis derived OMVs as new candidates to treat obesity through improvement of tight junction, FIAF and PPARs genes expression.

**Methods:** Bacteroides fragilis ATCC 23745 was grown on BHI broth for OMV extraction by tris-EDTA -Sodium deoxycholate buffers and sequential centrifugation. After confirmation of OMVs physicochemical properties using electronic microscopy and SDS-PAGE, OMVs were treated with Caco-2 cell line in different concentrations. By RNA extraction and cDNA synthesis, genes expression were assayed using SYBR Green qPCR. Our data were analysed with statistical tests.

**Results:** B. fragilis produced spherical shape OMVs with diameter ranging 30-110 nm and specific protein profile. Our data demonstrated that the levels of ZO-1 and occludin transcripts were increased by 50 µl/ml of B. fragilis derived OMVs after overnight treatment in caco-2 cells. Also significant increased mRNA levels of Fiaf was identified by this treatment. Among PPARs, PPARd and PPARa transcripts were elevated while PPARg transcripts were reduced by 50 µl/ml of B. fragilis derived OMVs in Caco-2 cells.

**Conclusion:** B. fragilis derived OMVs could be promising next generation probiotic candidates due to its possible potentials in the improvement of gut barrier permeability and fat deposition.

**Keywords:** Gut microbiota, Bacteroides fragilis, OMVs, fasting-induced adipose factor and tight junction

# P671 - 976: ASSOCIATION BETWEEN THE MICROBIOME AND MULTIPLE SCLEROSIS

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**Background and Aim:** Multiple sclerosis (MS) is a chronic CNS demyelinating disease mediated by auto-reactive immune attack against central neural tissues. Environmental factors are thought to be essential for the development of MS. One kind of environmental factor that contributes to human physiological dysfunction is a perturbed gut microbiota, the assemblage of microorganisms present in the gut. The aim of this study was to evaluate role of microbiota in MS.

**Methods:** The study was reviewed by searching scientific articles and books and resources have been made.

**Results:** Our results of studies showed that CD4+ T cells (pathogenic TH17 and TH1 cells) and loss of regulatory T (Treg) cell function are essential in the development of MS. Several studies showed that the gut microbiota plays in nutrition, protection against pathogens, and development of the immune system. A dysbiotic microbiome contributing to MS is reasonable in light of recent evidence. The absence of microbes or presence of certain microbes modulate local Treg, TH17 and TH1/TH2 abundance.

**Conclusion:** The focus of this study is on the implicated role of the microbiome in MS. A comprehensive therapeutic approach is to address the underlying problems that give rise to the complex pathologies, which might include addressing the gut microbiome. Importantly, the microbiome influence extends far beyond immune regulation. Because the dysbiosis of the gut microbiome could lead to multiple pathologies shared with MS, dysbiosis may be among the underlying causes of MS found in some individuals.

**Keywords:** Multiple sclerosis, CNS, Gut microbiota

# P672 - 1035: ASSOCIATION BETWEEN BODY MASS INDEX AND FECAL CONCENTRATION OF FIRMICUTES AND BACTEROIDETES IN IRANIAN ADULTS

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**Background and Aim:** The worldwide epidemic of obesity and its complications has become an important public health issue. Studies of the bacterial communities of the gut microbiota have revealed a shift in the ratio of gram-positive Firmicutes and gram-negative Bacteroidetes in obese patients. However, there are some conflicting results in different populations. The aim of this study was to evaluate the concentration of Firmicutes and Bacteroidetes in obese (BMI>30 kg/m2) and normal weight (BMI≤25 kg/m2) Iranian adults.

**Methods:** This study was performed on 31 normal weight adults and 28 obese adults (aged 20-50 years). Fecal samples were obtained from participants and their demographic and anthropometric parameters were collected. Total microbial DNA was extracted from faeces. Fecal concentrations of two major bacterial phyla in gut were measured by Real time PCR using specific primers.

**Results:** The mean BMI of obese and normal weight adults were 34.1 and 22.3 kg/m2, respectively. There were no significant differences in demographic characteristics between two groups except for age. No significant difference in Firmicutes concentration was observed. The Bacteroidetes concentration was higher in normal weight subjects than in the obese participants. However, this difference was not statistically significant.

**Conclusion:** We found no significant difference in the Firmicutes to Bacteroidetes ratio between normal weight and obese subjects.

**Keywords:** Intestinal microbiota, Obesity, Firmicutes, Bacteroidetes

# P673 - 1063: EVALUATION OF OROPHARYNX MICROBIOTA AMONG OF CHILDREN 3-6 YEARS OLD BY CULTURE METHOD IN ILAM CITY 2015-2016

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**Background and Aim:** Nowadays, due to the crisis of respiratory Infections in children, researchers pay attention to examine the respiratory microbiota and understanding the interactions between host and microbial populations. Thus, understanding the microbial composition can be very helpful in future health planning. This study was performed to evaluate the oropharynx microbiota in healthy children.

**Methods:** Oropharyngeal samples were taken from the 77 healthy children, and processing samples was performed by the culture on basic culture media at 37°C and 5% CO2. In the case of isolates that definitive diagnosis were difficult, first The universal primer were designed for 16S rRNA gene and then resulting PCR gene products were sequenced.

**Results:** A total of 77 swabs, 346 distinct isolates identified. In general, fifteen culturable bacterial genus were identified, that, Staphylococcus (aureus and coagulase negative staphylococci) and group viridance streptococci were dominant. The pathogenic species were S.aureus (75%), members of enterobacteriaceae Family (40.1%) and acinetobacter baumannii (15.6%) Were the predominant. Prevalence of Staphylococcus aureus and Acinetobacter baumannii was significantly associated with attending kindergarten (respectively p=0.006, p=0.04).

**Conclusion:** The study showed that some pathogenic bacteria were significantly more common in kindergarten children. Streptococcus Group viridians have important functional role in maintaining of microbial population balance of the oropharyngeal tract. According to the annual occurrence of the phenomenon of dust in Ilam city, and isolation of some bacteria from the dusty air, this phenomenon may be also causes of the high prevalence of Staphylococcus genus and Gram-positive bacilli in the children oropharynx in our study.

**Keywords:** Microbiome, oropharynx, culture, 16S rRNA

Nanomicrobiology

# P674 - 53: THE EFFECT OF EVALUATION BACTERIOCIN PLANTARICIN A IS ENCAPSULATED WITHIN THE NANOFIBER POLYVINIL ALCOHOL/CITOSAN ON STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Severe damage disrupts the protective skin barrier and exposes underlying tissue to antimicrobial invasion.S. aureus is a major pathogen implicated in skin and soft tissue infections. The ability to incorporate of a variety of biologically active compounds into nanofibers increases their potential as wound dressings.

**Methods:** Cs,PVA and Plantaricin A were mixed at different volume ratio before electrospinning.The electrospun nanofibers were assembled on a rotated drum as a collector which was placed at 10 and 12 cm from the needle tip and the high voltage was applied at 21, 22 and 23 kV.The surface morphology and diameter of the electrospun nanofibers were observed with a scanning electron microscope. The antimicrobial activity of a suspension was determined by using the well-diffusion method. n this way Staphylococcus aureus ATCC25923 was used. Nanofibers without Plantaricin A was used as control.

**Results:** The optimum conditions obtained with cs:Plantaricin A:PVA, (25:25:50, v/v), 21kV voltage, 12cm spinning distance at 0.5 mL/h feed rate to prepare nanofiber with an excellent antibacterial activity against Staphylococcus aureus. The mean diameter of nanofiber was about 180 n.m with Plantaricin A. Diameter of inhibition zone produced by this nanofiber with Plantaricin A against S. aureus was 10 mm.

**Conclusion:** Electrospinning is a versatile and relatively easy technique to produce large amounts of ultrathin fibers. Electrospinning has been used to encapsulate antibiotics. The Cs/PVA/Pr nanofibers were successfully produced through electrospinning. Consequently, the Cs/PVA/Pr nanofiberous mat has a great potential for tissue engineering because of its unique components and structure.

**Keywords:** Electrospinning, Chitosan, PVA, Plantaricin A

# P675 - 93: THE ANTI BACTERIAL EFFECT OF ZNO ON HOSPITAL BACTERIA

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**Background and Aim:** Zinc oxide nano particles have anti-bacterial properties against gram positive and gram negative bacteria. the purpose of this research, is the use of metal oxide nano particles in order to counteract bacterial Infection, including Staphylococcus aureus, Pseudomonas aeruginosa and Escherichia coli as an alternative method of antibiotics.

**Methods:** Anti-bacterial activity of the nano particles was performed on the bacteria Staphylococcus aureus, Pseudomonas aeruginosa and Escherichia coli, standard dilution of a dilution in agar – pipe 10-1-10-12 and how to use the Nano-particle suspension (net) holes in the concentrations of 10, 30, 50 Mcg on ml were evaluated and the results analyzed by SPSS Version16 analysis.

**Results:** In dilution tube diameter in agar for the method of bacteria Staphylococcus aureus infections in 10-1 till 10-4 and Escherichia coli the overall dilution reported in 10-1 to 10-9. On the method of suspension net diameter growth of nano particles in the holes for the two methods, the bacteria Staphylococcus aureus and Escherichia coli were the most reported overall sensitivity of the bacteria in a concentration was on 50 mg/ml. Diameter growth in the concentration of 50 mg/ml for the bacteria Staphylococcus aureus on the14mm, Escherichia coli in28mm and Pseudomonas aeruginosa was resistant in both method of statistical.($p < 0.05$).

**Conclusion:** Nano particles zinc oxide Anti-bacterial properties of considerable General Escherichia coli against the bacteria and Staphylococcus aureus has been showed. The bacteria Pseudomonas aeruginosa among tested bacteria, zinc oxide, resistant revealed.

**Keywords:** Nano zinc oxide particles, Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa

# P676 - 99: SYNTHESIS, ANTIBACTERIAL EVALUATION AND SURVEY ON THE THERMOPHYSICAL CHARACTERISTICS OF NOVEL MEDICALLY APPLICABLE POLYAMIDES CONTAINING PHARMACEUTICALLY OUTSTANDING TRIAZOLE MOIETIES

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**Background and Aim:** Here are many different strategies to decrease the incidence of infection of medical device and food related containers. One way to prevent infection is by modifying the polymers used in making the devices and containers. Incorporation of antimicrobial agents in the bulk material or in formulations of medical devices production has been considered a viable alternative for systemic application of antibiotics.

**Methods:** The in vitro antibacterial activity of the synthesized monomers and polymers containing 1,2,4-triazole ring against clinical isolates of Gram-positive and Gram-negative pathogens. In these experi- ments, minimum inhibitory concentrations (MICs) and mini- mum bactericidal concentration (MBC) were determined and their activities were interrelated by the known antibiotics peni- cillin, ciprofloxacin and gentamicin as known standards.

**Results:** These polymers were readily soluble in a variety of organic solvents, showed significant thermal properties and also viscosities in the range of 0.55– 0.66 dL/g. They have been tested against a range of Gram-positive and Gram-negative pathogens.

**Conclusion:** The results indicated that these novel polymers containing triazole moiety in their repeating units can effectively control Gram-positive and negative pathogens and their physic-chemical properties besides their antibacterial characteristics make them unique candidate for using in the manufacturing of the medical devices.

**Keywords:** Antibacterial activity, medical device, MIC test, polyamide, triazole group

# P677 - 113: THE ISOLATING ESCHERICHIA COLI SECRETORY OUTER MEMBRANE VESICLES BY USING TANGENTIAL-TRANS FLOW FILTRATION

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**Background and Aim:** Among pathogenic bacteria, Gram-negative bacteria are more important. The secreting outer membrane vesicles of the bacteria are important role in physiology, virulence, and the interaction between host and pathogen. These vesicles allow bacteria to transmit enzyme and its contents as conserved form and also these involved in viability. Since they are represented as bacteria candidate, study of them can be help to learn more about bacteria and their interaction with the environment. Therefore, the isolation methods of vesicles are important. So, the aim of this study was to introduce a new method for isolation of Escherichia coli outer membrane vesicles.

**Methods:** The bacteria of enterotoxigenic Escherichia coli were cultured under standard conditions. Supernatant was removed and then the tangential- trans flow filtration was used for concentrating vesicles, after that high speed centrifuges were used for obtaining the deposition. Isolated vesicles confirmed by transmission electron microscopy and molecular weight of the protein concentration was determined.

**Results:** Vesicle morphology was confirmed by transmission electron microscopy and size of vesicles were determined between 50 to 100 nanometers. Electrophoretic pattern reflects the strong and weak bands in the region between 22-41 kDa and concentration of protein was determined 542 micrograms.

**Conclusion:** In the present study these results shows that the use of this method, in addition to provide same product, had positive benefits from time and economic perspective in compare to common procedure and It can also use to isolate the vesicles at the industrial level.

**Keywords:** Secretory outer membrane vesicles, tangential- trans flow filtration, Escherichia coli

# P678 - 122: COMPARISON OF A GENETICALLY ENGINEERED STRAIN WITH A NATURALLY OCCURRING BACTERIUM IN BIOSYNTHESIS OF PLATINUM NANOPARTICLES

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**Background and Aim:** Though wild-type microorganisms have been able to successfully produce platinum nanoparticles (PtNPs), but the yield of their biosynthesis is relatively low. As well as the size and composition of the nanoparticles must be controlled. Thus the aim of this study was to compare biosynthesis potential of platinum nanoparticles with a genetically engineered strain Pseudomonas fluorescence os8 and a naturally occurring bacterium Marinobacter adhaerens 2C8.

**Methods:** These bacteria were cultured in LB Broth medium and the cell pellets were separated by centrifugation. For PtNPs biosynthesis, cell-free extract mixed with solution H2ptcl6 (0.01M) at a ratio of 2:1 then incubated for 1 hour. Characteristics of PtNPs were investigated by UV–visible spectroscopy, X-ray diffraction peaks (XRD), Fourier transform infrared spectroscopy (FT-IR), and zeta potential.

**Results:** Preliminary approval biosynthesis of PtNPs was Yellow-brown liquid colloid in solution. Absorption spectra of PtNPs obtained from cell-free extract of p. fluorescence os8 and M. adhaerens 2C8 were recorded at 331 nm and 330 nm, respectively. For both of them XRD results showed 111, 200 and 220 planes of the face-centered cubic. The FT-IR spectra for them clearly showed the presence of primary and secondary amines which may be responsible for the reduction and subsequent stabilization of the resulting extracellular PtNPs. Zeta potential of P. fluorescence os8 and M. adhaerens 2C8 were -21.98 mV and -35.19 mV, respectively.

**Conclusion:** In conclusion, biosynthesis of PtNPs using above bacteria did not show significant difference in case of their characteristics and both strains could synthesis PtNPs in high yield and speed.

**Keywords:** Biosynthesis, cell-free extracts, PtNPs

# P679 - 124: AN INVESTIGATION OF THE EFFECT OF COPPER NANOPARTICLES ON E.COLI GENOME BY RAPD MOLECULAR MARKERS

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**Background and Aim:** Regarding the bacterial resistance of common antibiotics and anti-microbial agents, a great number of studies have been conducted to discover the recent types of antimicrobial agents. With the recent developments in nanotechnology, copper has been extensively used as nanoparticles against all positive-gram and to negative-gram particles due to its low price and high anti-microbial activity.

**Methods:** In the present study, copper oxide nanoparticles of (<20 nm) have been used to study its effect on the genome of Escherichia coli strain O157: H7 as a model for Gram-negative bacteria. To this end, the bacteria were first treated with 30 and 60 µg/mL copper oxide nanoparticles at the intervals of 2, 4, and 24 hours. and then their DNA were extracted.

**Results:** In order to investigate the effects of copper oxide nanoparticles on the genome, the chain reaction techniques of (RAPD-PCR) was employed. Using the software NTSYS-PC, the results obtaind from electrophoresis of PCR products on agaros gel were analyzed.

**Conclusion:** The results of the study revealed that copper oxide nanoparticles not only affects the growth of bacteria but also affect the sequencing of genomic DNA and leads to the changes of them in different points.

**Keywords:** nanoparticles copper oxide, Escherichia coli, Rapid polymerase chain reaction (RAPD-PCR)

# P680 - 141: DETERMINATION OF MINIMUM INHIBITORY CONCENTRATION AND MINIMUM BACTERICIDAL CONCENTRATION OF COPPER OXIDE AND TITANIUM DIOXIDE NANOPARTICLES ON PSEUDOMONAS AERUGINOSA BACTERIA

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**Background and Aim:** High incidence of infectious diseases and the growing resistance of bacteria to traditional antibiotics has led to widespread investigation of alternative antibacterial compounds such as nanoparticles. The current study was conducted in vitro to study antibacterial effects of CuO and TiO2 nanoparticles on Pseudomonas aeruginosa bacteria and the result reported as MIC, MBC examination.

**Methods:** Pseudomonas aeruginosa ATCC 27853 were purchased from Padtan Teb company and nanoparticles were purchased from US Research Nanomaterials. In this investigation spot assay at five concentrations (5, 25, 50, 125 & 250 ppm) was performed. In this test, for better measurement of zone of inhibition, Triphenyl tetrazolium chloride (TTC) were used. Also, broth macrodilution method for MIC using 24 well plates and the minimum bactericidal concentration (MBC) of nanoparticles were determined.

**Results:** In four out of five concentrations of CuO nanoparticles spot test were positive and the inhibition zone observed, while TiO2 nanoparticles spot test assays were negative. MIC and MBC of CuO nanoparticles determined 2.5, 5 mg/ml respectively though TiO2 nanoparticles grew at broth assays even beyond 20 mg/ml concentration and did not yielded a negative growth at any concentration used for the suggested limits for MIC based on Clinical and Laboratory Standards Institute (CSLI) guidelines.

**Conclusion:** Bactericidal property of CuO nanoparticles was remarkably higher than TiO2 nanoparticles in the same condition. The concentration of nanoparticles has a direct impact on bactericidal ability. Possibly by more research and investigation, CuO nanoparticles can be consider as adjunctive therapy in combination with other antibacterial compounds.

**Keywords:** Pseudomonas aeruginosa, Titanium dioxide, Copper Oxide, Nanoparticles, Antibacterial effects

# P681 - 150: MAGNOLIA GRANDIFLORA L. LEAVES EXTRACT MEDIATED GREEN SYNTHESIS OF SILVER NANOPARTICLES AND INVESTIGATION OF ITS ANTIBACTERIAL PROPERTIES

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**Background and Aim:** Silver nanoparticles play an integral part in the evolution of new antimicrobials against the broad ranges of pathogenic microorganisms. Recently, biological synthesis of metal nanoparticles using plant extracts has been successfully consummated. In the present study, the biosynthesis of silver nanoparticles was conducted using the leaves extract of Magnolia grandiflora L., and investigation of its antibacterial properties.

**Methods:** The synthesized silver nanoparticles were characterized using various instrumental techniques including Fourier transform infrared spectroscopy (FT-IR), X-ray diffraction (XRD), ultraviolet-visible spectroscopy (UV-Vis) and transmission electron microscopy (TEM). Later, the antibacterial activity of the synthesized silver nanoparticles was tested using both gram positive as well as gram negative bacteria i.e. Staphylococcus aureus (ATCC 25923) and Escherichia coli (ATCC 25922), respectively.
**Results:** FT-IR spectroscopy revealed that AgNPs were functionalized with biomolecules that have primary amine group, carbonyl group, OH groups and other stabilizing functional groups. An absorption band centered around 438 nm was observed, this absorption corresponds to the surface plasmon resonance (SPR) of the silver nanoparticles. The structure and composition of silver nanoparticles were analyzed by XRD and showed that the AgNPs are crystalline in nature and have face-centered cubic (FCC) geometry. The morphological study of silver nanoparticles using TEM suggests that the nanoparticles are spherical in shape with a diameter around 45 nm. The synthesized AgNPs exhibited good antibacterial potential against gram positive and gram negative bacterial strains.
**Conclusion:** In this study, synthesized Ag-NPs have the efficient antibacterial activity against pathogenic bacteria. Ag-NPs have an important function in the field of nanotechnology and nanomedicine.

**Keywords:** Magnolia grandiflora L.,Silver nanoparticles, Antibacterial activity, Nanomedicine

# P682 - 151: SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL ACTIVITY OF SILVER NANOPARTICLES USING MEDICAGO SATIVA LEAVES EXTRACT

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**Background and Aim:** Silver nanoparticles play an integral part in the evolution of new antibacterials against the broad ranges of pathogenic microorganisms. Recently, biological synthesis of metal nanoparticles using plant extracts has been successfully consummated. In this study the biosynthesis of silver nanoparticles using Medicago sativa leaves extract as a reducing agent by microwave irradiation method and its antimicrobial properties has been reported.

**Methods:** The synthesis of silver nanoparticles was confirmed by visual observation: UV-Vis spectrum, Fourier Transform Infra-Red (FTIR), X-ray diffraction (XRD) and transmission electron microscopy (TEM). Later, the antibacterial activity of the synthesized silver nanoparticles was tested using both gram positive as well as gram negative bacteria i.e. Staphylococcus aureus (ATCC 25923) and Escherichia coli (ATCC 25922), respectively.

**Results:** UV-Vis spectroscopy studies showed that the absorption spectra of synthesized silver nanoparticles from leaves extracts had absorbance peak range of 430 nm and 445 nm, respectively. The FTIR results showed the presence of some biomolecules in extracts that act as reducing and capping agent for silver nanoparticles biosynthesis. The XRD peaks 38∘, 44∘, 64∘, and 77∘ for leaves extract can be assigned the plane of silver crystals (111), (200), (220), and (311), respectively, and indicate that the silver nanoparticles are face centered cubic (FCC), and crystalline in nature. The synthesized AgNPs exhibited good antibacterial potential against gram positive and gram negative bacterial strains.

**Conclusion:** Further, efficient antibacterial activity of the synthesized silver nanoparticles proves the application potential of green synthesis in the area of nano-medicine.

**Keywords:** Medicago sativa, Silver nanoparticles, XRD, Antibacterial activity, Nano-medicine

# P683 - 152: ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY OF SILVER NANOPARTICLES BIOSYNTHESIZED USING TRIFOLIUM REPENS LEAVES EXTRACT

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**Background and Aim:** The phyto-mediated synthesis is a rapid, suitable and most acceptable biosynthetic method for synthesis of metal nanoparticles. Silver nanoparticles (AgNPs) have been used enormously due to their potential anti-bacterial, anti-fungal, anti-oxidant and anti-proliferative activity. In this study, antibacterial and antioxidant activity of silver nanoparticles biosynthesized using Trifolium repens leaves extract act as a reducing and capping agent has been reported in the present work.

**Methods:** The formation of silver nanoparticles was observed by the change of color from colourless to dark brown by the addition the leaves extract. The synthesized silver nanoparticles were characterized using various instrumental techniques including ultraviolet-visible spectroscopy (UV-Vis), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FT-IR), and transmission electron microscopy (TEM). The antibacterial activity was assessed against two bacterial pathogens like Escherichia coli (PTCC 1399), Staphylococcus aureus (PTCC 1113) by MIC & MBC assay. Antioxidant activity was determined by DPPH0 scavenging method.

**Results:** UV-Vis analysis revealed that AgNPs had a sharp peak at 418 nm. X-ray Diffraction result confirmed the characteristic peaks indicated at 111, 200, 220 and 311 for the crystalline of the face centered cubic silver. FTIR analysis verified the involvement of the phenolic compounds in AgNPs formation. The morphological study of silver nanoparticles using TEM suggests that the nanoparticles are spherical in shape with a diameter around 30 nm. In DPPH0 assay, hydro-alcoholic extract was found to be the most effective

**Conclusion:** The production silver nanoparticles exhibited efficient antibacterial and antioxidant activities. Therefore, silver nanoparticles produced by this green synthesis is able to use medical technologies.

**Keywords:** Trifolium repens, Silver nanoparticles, Antibacterial activity, Antioxidant activity

# P684 - 158: ANTIBACTERIAL EFFECTS OF CURCUMIN ENCAPSULATED IN MICELLE NANOPARTICLES ON MEXX GENE EXPRESSION IN CIPROFLOXACIN RESISTANT ISOLATES OF PSEUDOMONAS AERUGINOSA IN GUILAN

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**Background and Aim:** Curcumin, a polyphenolic compound fromturmeric (Curcuma longa) is a pharmacologically safe agent that has antibacterial activities. Pseudomonas aeruginosa as a major nosocomial infection has been obtained multidrug resistance. Antimicrobial resistance is an increasing threat in hospitals. In this study, the effect of Curcumin encapsulated in nanoparticles (micelles) and ciprofloxacin on mexX gene expression was evaluated in ciprofloxacin resistant isolates of Pseudomonas aeruginosa.

**Methods:** In this study, 6 ciprofloxacin resistant isolates of Pseudomonas aeruginosa were treated by ciprofloxacin (1/2MIC) only (control sample) and in the combination with curcumin - encapsulated in nanoparticles (test sample). After 24h, two cell groups was cultured in Mueller hinton agar to estimate cell death percentage. After RNA extraction and cDNA synthesis, the expression of mexX gene was evaluated quantitatively by Real-time PCR method in curcumin treated and un-treated cells.

**Results:** Our results showed that a combined ciprofloxacin (1/2MIC) and curcumin-encapsulated in nanoparticles treatment reduced the bacterial growth up 50% after 24h. In treated cells with curcumin and ciprofloxacin revealed downregulation of mexX gene compared to treated cells with ciprofloxacin alone.

**Conclusion:** Our findings suggested that curcumin could be inhibited bacterial growth through several ways such as decrease of mexXY-oprM efflux pump count in the cell surface. Also, it seems that curcumin synergically increases antibacterial effects of ciprofloxacin in resistant isolates of Pseudomonas aeruginosa.

**Keywords:** Curcumin, efflux pump, mexX, micelles nanoparticles, Pseudomonas aeruginosa

# P685 - 198: STUDY OF ANTIBACTERIAL EFFECT OF SILVER NANOPARTICLES AGAINST GRAM POSITIVE AND GRAM NEGATIVE BACTERIA

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**Background and Aim:** Recently, due to the growing bacterial resistance to common antibiotics, drastic studies have been made to evaluate bactericidal effect of nanoparticles. In current study the antibacterial activities of AgO-TiO2 nanoparticles against gram positive and gram negative bacteria were studied.

**Methods:** The synthesized AgO-TiO2 nanoparticles were characterized by scanning electron microscopy. Antibacterial effects of nanoparticles against Escherichia coli (ATCC 25922) and Staphylococcus aureus (ATCC 25923) were evaluated. For this propose, Minimum Inhibitory Concentration (MICs) and Minimum Bactericidal Concentration (MBCs) values of synthesized AgO-TiO2 were determined by Macro Broth Dilution method according to Clinical and Laboratory Standards Institute (CLSI) guidelines.

**Results:** The MICs and MBCs of AgO-TiO2 nanoparticles were found to be 24 and 48 µg/ml for Escherchia coli and 24 and 24 µg/ml for Staphylococcus aureus respectively

**Conclusion:** Our results revealed that synthesized AgO-TiO2 nanoparticles have appropriate antibacterial activity against both gram positive and gram negative bacteria. However, their effectiveness on gram-positive bacteria was higher.

**Keywords:** AgO-TiO2, Nanoparticles, Anti-bacterial activity, Escherichia coli, Staphylococcus aureus

# P686 - 213: AN IN VITRO INVESTIGATION OF THE ANTIBACTERIAL EFFECTS OF SILVER NANOPARTICLES ON STAPHYLOCOCCUS SAPROPHYTICUS

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**Background and Aim:** Staphylococci are one of the most pathogenic Gram-positive bacteria in humans. A member of the coagulase-negative staphylococci (CONS), Staphylococcus saprophyticus accounts for 10-20 % of uncomplicated urinary tract infections (UTIs) in young and middle-aged females. With the development of nano technology, nanoparticles have become one of the promising and useful antibacterial agents. Silver nanoparticles have anti fungal, anti viral and anti bacterial properties. The aim of this study is to investigate the in vitro antibacterial effect of silver nanoparticles on Staphylococcus saprophyticus.

**Methods:** The pathogenic strain were obtain from patients. bacteria were identified based on colony morphology, microscopic morphology and differential sensitivity tests to novobiocin. Silver nanoparticles were prepared at 20 nm diameter. The in vitro antibacterial activity of silver nanoparticles on pathogenic strain of staphylococcus saprophyticus was evaluated by the broth microdilution method for determining MIC (minimum inhibitory cincentration) and blood agar medium for determining MBC (minimum bactericidal concentration).

**Results:** Based on the findings, silver nanoparticles have inhibitory effect on growth at 62.5 ppm concentration and have bactericidal activity at 125 ppm concentration.

**Conclusion:** The increasing resistance of bacteria to antimicrobial agents is a major problem all around the world. Staphylococcus saprophyticus is known to be a leading cause of UTIs. on the other hand, it has been shown that silver nanoparticles possess antibacterial properties and are also highly effective against Staphylococcus saprophyticus. Hence, future studies focusing on the impact of silver nanoparticles in the treatment of UTIs caused by Staphylococcus saprophyticus.

**Keywords:** Silver nanoparticles, Staphylococcus saprophyticus, MIC, MBC

# P687 - 235: THE EFFECT OF CURCUMIN ENCAPSULATED IN NANOPARTICLES ON DEATH OF PSEUDOMONAS AERUGINOSA STRAINS AND MEXB GENE EXPRESSION

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic gram-negative bacterium that is a major cause of nosocomial infections such as severe burns. Curcumin is the main component of turmeric (Curcuma longa) that has anti-cancer and anti-inflammatory effects. The aim of this study was evaluation of antibacterial effect of curcumin in Pseudomonas aeruginosa.

**Methods:** In this study, Pseudomonas aeruginosa strains was obtained from hospitals and laboratories in Guilan province. After disc difusion and MIC tests, 6 ciprofloxacin resistant strains of Pseudomonas aeruginosa were treated by ciprofloxacin (1/2MIC) only (control sample) and in the combination with curcumin -encapsulated in nanoparticles (test sample). After 24h, RNA extraction and cDNA synthesis was performed. Then, the expression of mexB gene was evaluated quantitatively by Real-time PCR method in curcumin treated and un-treated cells.

**Results:** Our study showed that the combination of ciprofloxacin with nano-curcumin inhibits the growth of Pseudomonas aeruginosa. Also with Real Time-PCR showed curcumin encapsulated in nanoparticles reduced the expression of mexB.

**Conclusion:** Our results showed that curcumin encapsulated in nanoparticles combined with lower concentrations of ciprofloxacin inhibits the growth of Pseudomonas aeruginosa through reducing mexB expression.

**Keywords:** Pseudomonas Aeruginosa, Ciprofloxacin, curcumin, mexB, nanoparticles

# P688 - 242: EXTRACELLULAR BIOSYNTHESIS OF SILVER NANOPARTICLES BY LACTOBACILLUS PLANTARUM

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**Background and Aim:** Nanotechnology is as important field of modern research with potential effects in pharmacology and medicine. Nanotechnology can be defined as a research for the design and synthesis structure of particles with dimension smaller than 100nm. A new branch of nanotechnology is nanobiotechnology. An important part of Nanobiotechnology is synthesis of nanoparticles by microorganism. In this study we used Lactobacillus plantarum for extracellular biosynthesis of silver nanoparticle.

**Methods:** Lactobacillus plantarum was cultured in MRS broth and incubated in 370c and 5% co2 for 24 h. Then its centrifuged in 4000 rpm for 20 min, supernatant was added to silver nitrat (10-3M) and incubated in 370c for 1 week. Change of color to brown was shown that AgNps synthesized. Other tests such as UV-vis spectrophotometer, XRD, XRF, AAS and TEM were used. optimize the production of silver nanoparticles (temperature, pH, concentration of solution) was done. the stability of silver nanoparticles were measured in the six months.

**Results:** The results showed that Lactobacillus plantarum has the ability to produce silver nanoparticles. Uv-Vis spectrophotometer, XRD and FTIR diagrams were provided that AgNps synthesized . Size of this AgNps were 15-25 nm and their concentration was 161.01 ± 0.5 ppm. optimization results were shown that 370c , pH 5.6, silver nitrate concentration (10-3M) were the best conditions.

**Conclusion:** In this present study we have reported a simple, biological, extracellular, easy, nontoxic, economical and eco- friendly method for synthesizing silver nanoparticles by using one of the non pathogenic bacteria.

**Keywords:** Biosynthesis, Silver Nanoparticles, Lactobacillus plantarum

# P689 - 267: SILIBININ ENCAPSULATED IN NANOPARTICLES THERAPY IN PSEUDOMONAS AEROGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is an important nosocomial infection. Silibinin as an herbal drug has anti-inflammatory and anti-cancer properties that nowadays researcher survey its antibacterial activities. The aim of this study was to evaluate the anti-bacterial potential of silibinin encapsulated in nanoparticles, against clinical isolates of Pseudomonas aeruginosa in combination with ciprofloxacin.

**Methods:** Herein, we isolated 69 clinical strains of Pseudomonas aeruginosa from patients in Guilan province. After determination of antibiogram by disc diffusion and MIC methods, 10 ciprofloxacin (CP) resistant isolates were treated by ciprofloxacin only and in the combination with nanoparticle encapsulated silibinin. Antimicrobial activity of silibinin nanoparticles was assessed by MBC method. After RNA extraction and cDNA synthesis, mexB expression investigated in treated and untreated cells by silibinin nanoparticles and ciprofloxacin.

**Results:** In this study have been shown that %33 of isolates were resistant to ciprofloxacin and the highest resistance of ciprofloxacin (CP) was determined in 1024 ?g/ml. Our findings showed that combined silibinin nanoparticles and ciprofloxacin therapy reduced the bacterial counts below the lowest detectable limit after 24h. Also Q-RT-PCR analysis revealed that combined therapy led to downregulation of mexB, as well as increase of ciprofloxacin efficiency in resistance isolates.

**Conclusion:** Our results suggests that silibinin encapsulated in nanoparticles could be inhibit growth of drug resistant isolates of Pseudomonas aeruginosa through different mechanisms such as mexB downregulation.

**Keywords:** Pseudomonas Aeruginosa, Silibinin, Ciprofloxacin, MIC, mexB

# P690 - 290: EFFECT OF PH ON ACTIVITY AND STABILITY OF IMMOBILIZED PHYTASE ON CARBON NANOTUBES

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**Background and Aim:** Today, many industries need to enzymes that are able to operate in a specific or diverse range of pH. Thus, nanotechnology can be used to improve the performance of enzymes. In this study phytase enzyme from E.coli was immobilized on multi walled carbon nanotube through strong covalent bonds, to determine the effect of various pH on enzymatic activity.

**Methods:** Enzymatic assay and Bradford method were used to confirm immobilization. Free and immobilized enzyme were assayed in various pH reactions (1.5 to 10.5) to determine the optimum pH also for determining pH stability, before standard assay test, each free and immobilized phytases were incubate at pH 1.5, 2.5, 4.5, 6.5 and 10.5 for 90 minutes.

**Results:** Results showed the optimum pH for free and immobilized phytase were 5.5 and 6.5 respectively. Also the optimum pH range were 4 to 6 and 4 to 7 for free and immobilized enzyme, respectively. For stability, relative activities showed that, at pH 1.5 the activity of free and immobilized enzyme retained only 12.35% and 6% respectively. Their activity were 93% and 100% for immobilized and 100% and 80% for free phytase at pH 4.5 and 6.5, respectively. These results indicate the improvement in stability of immobilized enzyme at alkaline conditions compared with free enzyme.

**Conclusion:** Immobilization of phytase on carbon nanotube increased the stability and pH range of enzymatic activity. So immobilized phytase can perform appropriate activity as a feed enzyme for fishes.

**Keywords:** Phytase, immobilization, carbon nanotube, pH stability

# P691 - 291: INVESTIGATION OF MEXC GENES EXPRESSION IN CIPROFLUXACIN RESISTANT STRAINS OF PSEUDOMONAS AEROGINOSA TREATED BY CURCUMIN-ENCAPSULATED IN NANOPARTICLES

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**Background and Aim:** Pseudomonas aeruginosa is a gram negative bacterium and opportunistic pathogen that is resistant to different antibiotics. Curcumin is a polyphenolic compound extracted from roots of turmeric with antibacterial, antioxidant and the anticanceric effects. In this study, we evaluated the effect of curcumin on death of Pseudomonas aeruginosa and expression of mexC gene.

**Methods:** In this study, Pseudomonas aeruginosa strains was obtained from hospitals and laboratories in Guilan province. After disc diffusion and MIC tests, 6 ciprofloxacin resistant strains of Pseudomonas aeruginosa were treated by ciprofloxacin only and in the combination with curcumin -encapsulated in nanoparticles. RNA extraction and cDNA synthesis was performed. Then, the expression of mexC gene was evaluated quantitatively by Real-time PCR in curcumin treated and un-treated cells.

**Results:** This study revealed that the combination of ciprofloxacin with curcumin-encapsulated in nanoparticles inhibits the growth of Pseudomonas aeruginosa. RealTime-PCR showed curcumin encapsulated in nanoparticles reduced the expression of mexC.

**Conclusion:** Our results showed that curcumin encapsulated in nanoparticles combined with of ciprofloxacin decreased the growth of Pseudomonas aeruginosa through reducing mexC expression.

**Keywords:** Pseudomonas aeruginosa, Ciprofloxacin, curcumin, mexC, MIC, nanoparticles

# P692 - 301: DEVELOPMENT OF A MICROBIAL PHENOL BIOSENSOR BASED ON CARBON NANOTUBE(CNT)

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**Background and Aim:** Phenolic compounds are widespread environmental pollutants and many of them are very toxic to human life and environment. Phenols are usually detected using various spectrophotometric and chromatographic methods.

**Methods:** In this survey four Pseudomonas strains - from polluted soils of Tehran oil refinery region-Iran – were studied for development of a conductometric phenol biosensor. The bacteria were immobilized on gold interdigitated electrodes (IDE)s through cross-linking in presence of glutaraldehyde vapor. The performance of these biosensors was evaluated in presence of CNT (Carbon Nanotube) and different concentrations of phenol (0.01-3mM).

**Results:** In presence of CNT optimized concentration, output signals and the sensitivity of biosensor were increased in one of the strains

**Conclusion:** The high electrical conductivity of CNT allows the utilization of them in electrode materials. Designing of biosensors with phenol degrading bacteria, would be a promising and reliable analytical tool for in the field monitoring of phenol in wastes.

**Keywords:** Phenol, biosensor, Carbon nanotube, Pseudomonas sp., interdigitated microelectrodes

# P693 - 378: ANTIBACTERIAL ACTIVITY OF BIOGENIC TITANIUM DIOXIDE NANOPARTICLES MEDIATED BY VIBRIO VLC UNDER VISIBLE LIGHT SPECTRUM

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**Background and Aim:** Increasing antibiotic resistance in bacterial strains is a serious and growing threat to human health. Therefore, there have been significant efforts to develop new antimicrobials agents. More recently, nanoparticles (NPs) have emerged as promising antimicrobial agents. Hence, the development of new NPs possessing with enhanced bactericidal effects is desirable. Previous studies showed that titanium dioxide (TiO2) nanoparticles due to their energy band gap (3.02 eV) had antibacterial activity under UV irradiation. In this work, we introduced biogenic TiO2NPs with a low energy band and high antibacterial activity without requiring UV light.

**Methods:** TiO2 NPs was synthesized using a green method mediated Vibrio VLC strain. Briefly, the cell free extract of bacterium was prepared and TiO(OH)2 solution as a precursor was added. The white precipitate was collected and dried in an oven at 350 ℃ for 3 h and characterized by XRD, UV-visible, and TEM. The band gap was calculated using Tauc/David-Mott model. The antibacterial activities were identified by MIC value for both Escherichia coli and Staphylococcus aureus strains.

**Results:** The XRD pattern showed diffraction peaks that were attributed to anatase phase. The band gap of the sample was calculated 2.24 eV. The TEM image displayed the spherical morphology and the NPs size was between 6.77- 21.35 nm. The MIC value was calculated 125 µg/mL for both strains.

**Conclusion:** Because the energy band gap of the sample lies in the range of visible light spectrum, it could be activated without requiring UV light. This is an advantage of our prepared NPs as compared with the previous biogenic TiO2 NPs.

**Keywords:** Titanium dioxide, Biosynthesis, Antibacterial activity

# P694 - 379: APPLICATION OF LUMINESCENT BACTERIA FOR BIOSYNTHESIS OF TIO2 NANOPARTICLES WITH FLUORESCENT PROPERTY

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**Background and Aim:** Nanoparticles (NPs) are biosynthesized using various bacteria. Luminescent bacteria emitted light as the result of oxidation of fatty aldehydes by the enzyme luciferase. The bacterial luciferase plays a key role in emitting light and most probably in biosynthesis of NPs. In this work, we demonstrated the presence of proteins with the luminescence enzymatic activity on NPs surface (S1) which they were removed following heat treatment (S2).

**Methods:** TiO2 NPs was synthesized using a green method mediated by VibrioVLA strain. The precipitate was dried and a part of the prepared powder was heated in an oven at 350 ℃ for comparison characteristic. The samples were characterized by XRD, FTIR, FESEM, and a fluorescent microscopy. The luminescence activity of samples was studied using a luminometer.

**Results:** The XRD patterns of samples showed diffraction peaks that were attributed to anatase phase. The FTIR spectra of S1 showed the peaks around 3300,1640, 1500, and 1071 cm-1 attributed to the primary and secondary amines groups. The FESM image showed the spherical morphology and the average particle size was 11.95 and 13.07 nm for S1 and S2, respectively. The EDX analysis showed C and N peaks for S1 that were attributed to the existence of enzymes. But these peaks were removed for S2. The S1 solution had fluorescent property most probably due to the existence FMN (Flavin mononucleotide). The suspension of S1emitted light up to 4000 RLU/s by adding decanal.

**Conclusion:** The important Vibrio VLA proteins with fluorescent properties were immobilized on TiO2 NP sample and showed interesting properties.

**Keywords:** Titanium dioxide, Fluorescent property, Luciferase enzyme

# P695 - 393: STUDY ON ENZYMATIC ACTIVITY OF CRYSTALLINE COTA PARTICLES EXTRACTED FROM BACILLUS SPHAERICUS SPORES

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**Background and Aim:** The 65-kDa CotA protein is one of the abundant proteins in the outer coat layer that recently represented highly thermostable laccase-like activities. Spores with their oxidative activities can be used as particles for oxidation of pollutants and petroleum components in waste water and environment. Since the spores have particular properties including resistance to dryness, UV radiation, salinity, variable pH and heat, it is suitable to be used in industry.

**Methods:**In the present study spores and the crystalline CotA particles (CCPs) that is extracted from spores were used and their catalase, laccase, and phenol oxidase activities were assayed and compared with the free spores. The results revealed that crystalline CotA particles of Bacillus sphaericus spores can maintain their enzymatic activities at 100°C (Crystalline CotA particle A) and at 100°C/10 psi for 10 min (Crystalline CotA particle B).

**Results:** Enzymatic activities of CCPs were more than spores probably due to more availability of CotA particles on CCPs.

**Conclusion:** This study revealed that the spores and their components are very active particles and they are good candidate for use in industry and wastewater treatment.

**Keywords:** Crystalline CotA particles, Enzyme activity, Bacillus sphaericus spores

# P696 - 442: EVALUATION OF ANTIFUNGAL EFFECT OF IRON OXIDE NANOPARTICLES SYNTHETIZED CHEMICAL METHOD AGAINST DIFFERENT CANDIDA SPECIES

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**Background and Aim:** Due to incidence of Candidiasis in immunocompromised hosts and increased resistance to antifungal drugs among Candida spp finding of novel agents with antifungal properties and fewer side effects is urgently needed. Iron oxide nanoparticles (IONPs) are among the most versatile and safe nanomaterials, and considered as non-toxic agents.

**Methods:** In this study the antifungal activity of IONPs against different Candida spp. by broth microdilution (BMD) methods was evaluated.

**Results:** The minimal inhibitory concentration (MIC) and minimum fungicidal concentration (MFC) values of IONPs ranged from 62.5 to 500 µg/mL and 500 to 1000 µg/ml, respectively. Isolates C. tropicalis, C. albicans and C. glabrata were most susceptible to IONPs.

**Conclusion:** Our finding showed that the IONPs possessed antifungal potential against pathogenic Candida spp. and could inhibit the growth of all the tested Candida spp.

**Keywords:** Iron oxide nanoparticles, Antifungal activity, Candida species

# P697 - 452: BIOSYNTHESIS OFSILVER NANOPARTICLES FROM ROMEX ALVEOLATOS AND INVESTIGATION OF THEIR POTENTIAL IMPACT ON ASPERGILUS NIGER

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**Background and Aim:** Nano Particle synthesis using plants is an alternative to conventional physical and chemical methods. The aim of this study was to produce silver Nano particle bye green methods. Characterized this structures and assess their antifungal activity against Romex Alveolatos.

**Methods:** The present study describes a rapid and eco-friendly synthesis AgNo3 using Romex Alveolatos leaf extract. Silver Nano particle have been characterized by UV_vis absorption electron microscopy. X-Ray diffraction Fourier transform infracted spectroscopy

**Results:** The obtained crystalline structure of silver nanoparticles ranged in size 50 to 90 and were mostly spherical in shape.

**Conclusion:** Synthetized silver nanoparticle by Romex Alveolatos showed antifungal activity against Aspergilos Niger.

**Keywords:** Silver nanoparticle, antifungal activity, Romex Alveolatos

# P698 - 463: GREEN SYNTHESIS OF SILVER NANOPARTICLES USING ZATARIA MULTIFLORA EXTRACT AND STUDY OF THEIR ANTIFUNGAL EFFECTS AGAINST CANDIDA ALBICANS

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**Background and Aim:** The synthesis of metallic nanoparticles has a great area in academic and, especially application research in nanotechnology. In comparison with various protocols for synthesis of nanoparticles, biological ways are nontoxic and eco-friendly methods that are gaining importance because of their high biocompatibility and environmentally safe nature, particularly in medical applications.

**Methods:** In this study, silver nanoparticles (AgNPs) were synthesized using Zataria multiflora extract. The parameters of temperature, plant extract and silver nitrate concentration were considered to optimize the biosynthesis of nanoparticles. Characterization of the biosynthesized nanoparticles was carried out using Zetasizer for determination of particle size and polydispersity index, and X-ray diffraction. In-vitro antifungal activity of green synthesized AgNPs was evaluated by agar well diffusion assay against Candida albicans.

**Results:** The result showed that the particles were in size ranging between 25 and 50 nm and had polydispersity index of 0.324. X-ray diffraction (XRD) spectrum of the silver nanoparticles exhibited 2? values corresponding to the silver nanocrystal. Results of agar well diffusion assay revealed antifungal activity of nanoparticles against Candida albicans with inhibition zone of 1.8 mm.

**Conclusion:** AgNPs were successfully synthesized from a silver nitrate solution through a simple green route, using Zataria multiflora extract as a reducing agent. In addition, the results represented that the green synthesized AgNPs has a good capability to use as antifungal agents.

**Keywords:** Nanotechnology, Ag nanoparticles, antifungal effect, Zataria multiflora, Candida albicans

# P699 - 482: GREEN MEDIATED SYNTHESIS AND CHARACTERIZATION OF SILVER NANOPARTICLES USING TEUCRIUM POLIUM LEAF EXTRACT AND EVALUATION OF ITS ANTIFUNGAL POTENTIAL

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**Background and Aim:** Silver nanoparticle play an integral part in the evolution of new antimicrobials against the broad ranges of pathogenic microorganisms. The aim of this study was to produce silver nanoparticles by green methods, characterized these structures and assess their antifungal activity against Fusarium oxysporum.

**Methods:** In this study we report the synthesis of nanoparticles using Teucrium polium extract. The silver nanoparticles have been characterized by UV-vis absorption spectroscopy, X-ray diffraction, Fourier transform infracted spectroscopy, and scaning electron microscopy. Also antifungal activity was determined by well diffusion method

**Results:** Results showed that the synthesized AgNps have a spherical shape and a size ranging from 37 to 122 nm. Also silver nanoparticles showed antifungal activity against Fusarium oxysporum.

**Conclusion:** So silver nanoparticles may represent a new therapeutic option for the treatment of fungal infections.

**Keywords:** Silver nanoparticles, Antifungal activity, Teucrium polium

# P700 - 493: COMPARISON OF EFFECT OF DIFFERENT NANOPARTICLES ON PSEUDOMONAS AERUGINOSA OF PRODUCING B-LACTAMASE OF IMP ISOLATED FROM PATIENTS

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic pathogen and one of very common the agents for hospital infections that is resistant to antibiotics. Producers of β-lactamase enzyme are very important factor in resistant. Nanomedicine introduce a new kinds of nanoparticles that have antimicrobial properties and apply them for killing fungi and bacteria and viruses. Recently the nanoparticles have been used in the treatment of bacterial infections. The aim of this study is introducing a high effective antibacterial nanoparticles on P. aeruginosa producing β-Lactamase of blaIMP isolated from patients.

**Methods:**150 strains were isolated from several hospitals in Tehran, 100 out of 150 strains were detected as P.aeroginosa by biochemical tests and PCR method. They were susceptible to different antimicrobial agents which was analyzed by Kirby-Bauer method and eventually MIC(Minimum Inhibitory Concentration) and MBC(Minimum Antibacterial Concentration) results was confirmed by Broth Micro dilution method. At last, inhibition of growth of bacteria was evaluated by using blank discs impregnated with nanoparticles.

**Results:**: This research finding shows that 52 out of 100 strains are observed IMP positive by PCR method and amount of MIC of 10 nm silver nanoparticles, 30 nm TiO2 nanoparticles, 30nm ZnSO4 nanoparticles, 50 nm Q.D was respectively reported 8µg/ml, 256 8µg/ml, 16 µg/ml, 64 µg/ml. Data was collected by ELISA immunoassay analyzer.

**Conclusion:** Our findings indicated that antibacterial of silver nanoparticles on Pseudomonas aeruginosa are more effective than the other mentioned nanoparticles. so for further experiments AgNPs are offered.

**Keywords:**: Pseudomonas aeruginosa, AgNO3, TiO2, Q.D, ZnSO4, IMP

# P701 - 500: CURCUMIN AND ANTIFUNGAL EFFECTS ON CANDIDA ALBICANS WITH DEREGULATION OF MDR1 GENE

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**Background and Aim:** Candida species are pervasive pathogens capable of causing both local and systemic infections in hospitalized patients. Candida albicans is one of the major fungal infections in immunocompromised patients. Curcumin is a hydrophobic compound extracted from the rhizome of Curcuma longa, has been used as an herbal drug with different effects in most Asian countries. The aim of this study was to evaluate the anti-fungal potential of curcumin encapsulated in nanoparticles, against clinical isolates of Candida albicans and MDR1 gene expression.

**Methods:** Fluconazole resistant isolates of Candida albicans were treated by fluconazole and or in the combination with curcumin -encapsulated in nanoparticles. Treated and untreated cells were cultured in Sabouraud dextrose agar. MDR1 gene expression evaluated by Q-RT-PCR method.

**Results:** In this study revealed curcumin-encapsulated in nanoparticles has synergic effect on fluconazole in treated cells. Also, deregulation MDR1 was found in curcumin- treated cells compared to untreated cells.

**Conclusion:** It appears that curcumin can be a suitable antifungal drug to treatment of Candida albicans infectins. Antifungal effects of curcumin may be due to deregulation of efflux pump, partly.

**Keywords:** Candida albicans, curcumin, nanoparticles, MDR1, Q-RT-PCR

# P702 - 552: ANTIBACTERIAL ACTIVITY OF SATUREJA KHUZESTANICA ESSENTIAL OIL NANOEMULSIONS

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**Background and Aim:** Nanoemulsions have been recently investigated to improve biological activity of lipophilic compounds, like essential oils. Improved aqueous dispersibility of lipohilic components, high surface area and stability are some advantages of nanoemulsion systems. Essential oils have several biological properties, such as larvicidal action, antioxidant, analgesic and anti-inflammatory, fungicide and antitumor activity. Moreover, the in vitro antimicrobial activity of EO has been reported extensively against a variety of microorganisms.

**Methods:** In this study we utilized Satureja Khuzestanica essential oil (SKEO) containing 85% carvacrol as a bioactive monoterpenoid for delivering one or more antimicrobial agents. Oil in water nanoemulsions containing PVA were prepared by ultrasonication method and then characterized by particle size analysis (Nanophox, DLS). The antibacterial activity of the essential oil in both pure and nanoemulsion was determined against E. coli(ATCC 25922), Salmonella typhi(PTCC1609), Shigella flexneri(PTCC 1234) and Staphylococcus aureus(ATCC25923) by measuring the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC).

**Results:** Our results showed that nano-emulsions containing 10% and 20% essential oil had a mean particle diameter of 329.16±0.47 nm and 332.72±10.97 nm, respectively. Prepared nano-formulations compared to the pure SKEO presented four times better MIC and MBC and their MIC and MBC were equaled against gram negative bacteria.

**Conclusion:** In conclusion, nano-emulsion systems improved antibacterial effect of SKEO.

**Keywords:** Nano-emulsions, Natural compounds, Antibacterial activity, E. coli, Salmonella typhi

# P703 - 561: THE EFFECT OF SILVER NANOPARTICLES AGAINST CANDIDA SPP. AND THE STUDY OF ITS DAMAGE BY SCANNING ELECTRONIC MICROSCOPY (SEM).

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**Background and Aim:** Candida albicans is the leading cause of opportunistic silver nano particles (AgNPs) have been extensively studied because of their antimicrobial potential. The aim of this study was evaluating the antifungal activity of silver nanoparticle on Candida dubliensis and the study of this damage bye electron microscopy.

**Methods:** In this study antifungal activity of silver nano particles (250/125/62.5/31.25/15.62 mg/ml) were studied against candida albicans bye well diffusion.

**Results:** The most average of clear zone diameter for silver nanoparticles were 50-100 nm minimum inhibitory and fungicidal concentration were 1.6 and 1.4 cm . scanning electron microscopy (SEM) showed morphology changes in C.dubliensis cells after exposure silver nano particles. This study determines the antifungal efficacy the silver nanoparticles against candida dubliensis.

**Conclusion:** Candida albicans is the leading cause of opportunistic silver nano particles (AgNPs) have been extensively studied because of their antimicrobial potential. The aim of this study was evaluating the antifungal activity of silver nanoparticle on candida dubliensis and the study of this damage bye electron microscopy.

**Keywords:** antifungal activity, silver nanoparticles, candida dubliensis, SEM

# P704 - 599: ANTIBACTERIAL AND ANTI-BIOFILM EFFECTS OF ANTIMICROBIAL PHOTODYNAMIC THERAPY USING NANOCHITOSAN-LOADED INDOCYANINE GREEN ON ACINETOBACTER BAUMANNII

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**Background and Aim:** As one of the causative agents in broad range of clinical infections, antibiotic resistant Acinetobacter baumannii strains have been posed health problems. Antimicrobial photodynamic therapy (aPDT) as an alternative antimicrobial procedure is suggested for treatment of clinical infections. Aim: The aim of current study is to evaluate the antibacterial and anti-biofilm effects of aPDT by nanochitosan-loaded indocyanine green (NCs-ICG) as a photosensitizer on planktonic and biofilm forms of A. baumannii.

**Methods:** aPDT was performed using NCs-ICG (at final concentration of 1.0 mg/mL) with 810 nm wavelength of diode laser at fluencies of 31.2 J/cm2 on A. baumannii ATCC 19606. The antibacterial and anti-biofilm potential of NCs-ICG-aPDT were determined via colony forming unit (CFU) and crystal violet assays, respectively.

**Results:** NCs-ICG-aPDT showed the significant reduction (1.2 log) on CFU/mL of planktonic A. baumannii strain compared to control group (untreated group). Also, biofilm formation of A. baumannii strain was significantly reduced (58.3%) when the bacteria were exposed to NCs-ICG-aPDT.

**Conclusion:** NCs-ICG-aPDT as an antibacterial and anti-biofilm approach can be an effective procedure in clinical health-care systems which can cause an effective decrease in pathogenic bacteria viabilities in different infections.

**Keywords:** Antimicrobial photodynamic therapy, Nanochitosan, Indocyanine green, Acinetobacter baumannii

# P705 - 610: ISOLATION OF A KLEBSIELLA PNEUMONIAE SPECIFIC LYTIC BACTERIOPHAGE FROM A HOSPITAL WASTE-WATER TREATMENT PLANT

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**Background and Aim:** Phage therapy has gained interest as a potential alternative to commonly used antibiotics for treatment of multidrug-resistant pathogens. The aim of this study was to isolate a lytic bacteriophage with the potential to lyse clinical isolates of Klebsiella pneumoniae.

**Methods:** Water samples from three hospital waste-water treatment plant outlets were collected, filtered and mixed with a fresh culture of K. pneumoniae (ATCC 10031) before incubation at 37°C overnight. The enriched phage culture was then centrifuged, filtered and the phage containing supernatant was tittered by the double layer method after mixing different dilutions of the phage preparation with 108CFU/ml of the ATCC strain in soft agar, overlaying on nutrient agar plates and incubating at 37°C overnight for detection of plaque forming units (PFU). Susceptibility of 50 multidrug-resistant clinical isolates of K. pneumoniae was measured by a spot test where phage suspensions (108 PFU) were placed on bacterial lawns before incubation at 37°C. Susceptibility was recorded when clear zones were observed on bacterial lawns after 24h.

**Results:** A lytic bacteriophage was isolated which formed small clear plaques (1mm) in K. pneumoniae ATCC host. Spot test results revealed the susceptibility of eight of the 50 K. pneumoniae multidrug-resistant clinical isolates (16%) to the isolated phage.

**Conclusion:** The isolated lytic phage showed specificity towards K. pneumoniae ATCC strain as well as 16% of the clinical test isolates. In vitro and in vivo studies are underway to determine its potential for treatment of K. pneumoniae associated infections.

**Keywords:**K. pneumoniae, bacteriophage, lytic

# P706 - 647: GREEN SYNTHESIS AND ANTIBACTERIAL EFFECT OF SILVER NANOPARTICLES USING SALVIA SAHENDICA

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**Background and Aim:** Nanotechnology has emerged as one of the most attractive areas of research in material sciences over the last decades. The fact that nanoparticles (NPs) exhibit quite a number of interesting and unique properties based on their specific characteristics, such as size, size distribution and morphology leads itself to various applications [1]., These applications are extending from catalysis, microelectronics, sensors, electrical batteries to biomaterials and therapeutics as well as the drug delivery and antimicrobial [2], etc. One of the most important applications of Ag-NPs is their use as an anti-bacterial agent. The use of plants in the synthesis of nanoparticles emerges as a cost effective and eco-friendly approach.

**Methods:** In this study, the synthesis of silver nanoparticles using Salvia sahendica extract and its antimicrobial properties has been reported. The treatment of aqueous solution of AgNO3 with Salvia sahendica extract resulted in rapid formation of stable Ag nanoparticles. The formation of nanoparticles was monitored by UV-vis spectrophotometer and nanoparticles were characterized using scanning electron microscopy (SEM) and dynamic light scattering (DLS).

**Results:** The SEM and DLS studies showed that silver nanoparticles are in 6–31 nm size range with an average of 14 nm. The XRD study showed that the particles are crystalline in nature, with a face centered cubic (fcc) structure. The silver nanoparticles showed the antimicrobial activity against Gram positive and Gram negative bacteria.

**Conclusion:** In Conclusion silver nanoparticles were prepared by a new method using Salvia Sahandica extract. This method is pollutant free and eco-friendly and also is a cost effective method.

**Keywords:** Green synthesis, silver nanoparticles, Salvia Sahendica, antibacterial activity, Scanning Electron Microscopy

# P707 - 684: COMPARISON ANTIMICROBIAL EFFECT OF MULTIWALLED CARBON NANOTUBES AND MULTI – DRUG RESISTANT MDR IMIPENEM ON PSEDOMONAS AERUGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is one of the most inflexible human pathogens, which poses serious clinical challenge because of multidrug-resistance. Due to its intrinsic and acquired antimicrobial resistance, limited classes of antibiotics can be used for the treatment of P. aeruginosa infection.So, finding a new treatment is very important. Nanomaterials for example Carbon nanotubes (CNTs) have advantages including overcoming mechanisms of resistance to antibiotics and fewer side effects. In this study, we compare the antimicrobial effect of multilayer carbon nanotubes and imipenem Multi Drug resistant on Pseudomonas aeruginosa.

**Methods:** In this study, 9 clinical Pseudomonas aeruginosa isolates and standard samples PAO1 were cultured in LB broth and 0.5 McFarland suspension was prepared. Then antibiogram test was done on Mueller-Hinton agar by disk diffusion method. Antibiogram inhibition zone was examined after 24 hours at 37˚C. The MIC for antibiotics and multilayer carbon nanotubes was measured via broth microdilution method in different concentrations by ELISA.

**Results:** The result showed, MIC for Pseudomonas aeruginosa have determined in ceftazidime (64 µg / ml), imipenem (32µg / ml,(ciprofloxacin (64 µg / ml (, piperacillin (128 µg / ml) and for carbon nanotube multilayer MIC (16 µg / ml.( MIC for antibiotics + nanotubes in 8 and 16 µg / ml was expressed.

**Conclusion:** In this study, we concluded, the inhibitory effect of CNTs is more than imipenem. The antibiotics and nanotubes together have growth inhibition effect synergism on Pseudomonas aeruginosa.

**Keywords:**Pseudomonas aeruginosa, carbon nanotubes multiwalled, MDR Imipenem, MIC

# P708 - 806: BIOSYNTHESIS OF SILVER NANOPARTICLES USING ROSA CANINA EXTRACT AND ITS ANTIBACTERIAL ACTIVITY

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**Background and Aim:** Nanotechnology is a most promising field for generating new applications in all areas. In this study the biosynthesis of silver nanoparticles using Rosa Canina leaves extract as a reducing agent by microwave irradiation method and its antibacterial properties has been reported.

**Methods:** The synthesized silver nanoparticles were characterized using various instrumental techniques including Fourier Transform Infrared Spectroscopy (FT-IR), ultraviolet-visible spectroscopy (UV-Vis), X-ray diffraction (XRD) and transmission electron microscopy (TEM). Later, the antibacterial activity of the synthesized silver nanoparticles was tested using both gram positive as well as gram negative bacteria i.e. Escherichia coli (PTCC 1399), Pseudomonas aeruginosa (PTCC 1599), Staphylococcus aureus (PTCC 1113), and Shigella dysenteriae (PTCC 1188), respectively.

**Results:** The phytosynthesized silver nanoparticles was characterized by FT-IR, UV-Vis, XRD, and TEM analysis. The morphological study of silver nanoparticles using TEM suggests that the nanoparticles are spherical in shape with a diameter around 35 nm. The surface plasmon resonance (SPR) band was observed at 420 nm for synthesized silver nanoparticles. FT-IR spectroscopy revealed that silver nanoparticles were functionalized with biomolecules that have carbonyl group, -OH groups and other stabilizing functional groups. The XRD pattern showed the characteristic Bragg peaks of (111), (200), (220) and (311) facets of the face center cubic (FCC) silver nanoparticles and confirmed that these nanoparticles are crystalline in nature. The synthesized AgNPs exhibited good antibacterial potential against gram positive and gram negative bacterial strains.

**Conclusion:** Further, efficient antibacterial activity of the synthesized silver nanoparticles proves the application potential of green synthesis in the area of nano-medicine.

**Keywords:** Rosa Canina, Silver nanoparticles, Shigella dysenteriae, TEM, Nano-medicine

# P709 - 851: STUDY OF ANTIMICROBIAL EFFECTS NANO SYSTEMS BASED (AMIKACIN@MESOPORUS SILICA) AGAINST PSEUDOMONAS AERUGINOSA.

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic pathogen of the major factors that have multiple virulence factors can cause a range of infections. Reduce the toxicity of drugs and drug carrier system health indicators in a significant increase. The aim of this study was to determine the effect of anti-bacterial antibiotics amikacin disulfate-containing functionalized mesoporous silica are compared with the free form of the drug on the strain of P. aeruginosa(PTCC1558).

**Methods:** In this study of meso-porous silica nanoparticles (SBA-15,SBA-15/NH2) for encapsulation and delivery of amikacin to reduce the dose or interval of drug that leads to reduced toxicity, especially in long-term treatment with the drug was used. To determine the minimum inhibitory Concentration (MIC) and minimum bactericidal concentration (MBC) mesoporous silica nanoparticles encapsulated amikacin compared with the free form of the drug against P. aeruginosa (PTCC1558). In vitro was performed using broth macro dilution tube.

**Results:** The results showed that due to the slow release of amikacin from Nano carriers under study, MIC and MBC amikacin loaded nanoparticles antimicrobial effect less than drug in free form has.

**Conclusion:** According to P. aeruginosa resistant to common antibiotics, are likely to be more studies of Nano-carrier systems for pharmaceutical, including meso-porous silica nanoparticles containing amikacin as new drug delivery system to prevent antibiotic resistance and side effects of long term use of the drug.

**Keywords:** Pseudomonas aeruginosa, mesoporous silica, SBA-15, SBA15/NH2, amikacin disulfate

# P710 - 860: STUDY THE SYNERGISTIC EFFECT OF PROPOLIS AND SILVER NANO PARTICLES INHIBIT THE GROWTH OF BACTERIA ESECHERICHIA COLI ANS STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Nowadays nanoparticles have special application as antimicrobial compound in medicine. As well as Methicillin resistance Staphylococcus aureus and Escherichia coli could cause health problem and infection that is not response to common antibiotics, so is more attention by microbiologist. In this study effects of lipid propolis nanoparticles and Silver nanoparticles were assayed on aroA sequence in twenty three isolates of Staphylococcus aureus and Escherichia coli.

**Methods:** So, lipid propolis nanoparticles and silver nanoparticles were prepared from Tabriz College of pharmacy and Nano Nasb Pars, Iran with six and four nanometer diameter, respectively. Then minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) were analyzed for lipid propolis nanoparticles and silver nanoparticles (SN) against S. aureus and E. coli by using micro broth dilution test.After that effects of both nanoparticles were assayed on expression and sequence of aroA gene by real time PCR technique.

**Results:** Results showed that lipid propolis nanoparticle and silver nanoparticle had antibacterial properties against S. aureus and E. coli with the mean of 312 and 156 microgram per ml of MIC, respectively and 156 microgram, MBC for both bacteria. Also, results documented that the level of aroA expression significantly was decreased after treatment.

**Conclusion:** It's should be concluded that lipid propolis nanoparticles and silver nanoparticles could inhibit the growth of S. aureus and E. coli and the expression of aroA gene. It's should be noted that more studies are need to obtain the best results.

**Keywords:** Antibacterial effect, aroA gene sequence, E. coli, lipid propolis nanoparticle, S. aureus, Silver nanoparticle

# P711 - 885: EXTRACELLULAR BIOPRODUCTION OF SILVER NANOPARTICLES BY FUSARIUM SPOROTRICHOSIS

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**Background and Aim:** Bioproduction of silver nanoparticles (SNPs) is emerging as an important branch of nanotechnology due to its eco-friendly, safe, and cost-effective nature. It was found that fungi score more advantages over other biological systems because of their high tolerance towards the heavy metals. SNPs have many applications such as disinfecting of drinking water.

**Methods:** Fusarium sporotrichosis was cultured in MGYP broth for 48h at 28°C. 100 ml of fungus filtrate was added to 100ml of 3mM silver nitrate solution and incubated for 24h at 28°C. The synthesized SNPs were characterized by UV-visible spectroscopy, Dynamic Light Scattering (DLS), Zeta potential, Field emission scanning electron microscope (FeSEM) and for particle size and shape.

**Results:** The addition of F.sporotrichosis filtrate to aqueous AgNO3 solution led to the appearance of brown color in solution after 24h of reaction which exhibited the formation of SNPs as macroscopic The UV-Vis spectrum exhibited an absorbance peak around 420nm which approved the formation of SNPs. Bioproduction of SNPs by culture supernatant indicated that the secreted proteins and enzymes are responsible for the reduction of silver ions. FeSEM photographs showed that the obtained SNPs are fairly uniform in size with a spherical shape and average diameter of 13 nm.

**Conclusion:** This study showed that the standard fungus of F.sporotrichosis has the ability of reduction of cationic silver ions to SNPs. Moreover; the SNPs forme extracellularly by F.sporotrichosis that causes the obtained SNPs be pure and free of cellular particles and are suitable for straightly uses.

**Keywords:** Silver Nanoparticles, F. sporotrichosis, Bioproduction

# P712 - 900: THE EFFECT OF COPPER AND SILVER NANOPARTICLES ON SALMONELLA TYPHI

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**Background and Aim:** This study aimed to determine the antibacterial activity of copper and silver nanoparticles and cotrimoxazole alone and combined state against Salmonella typhi.

**Methods:** In this experimental study, 10 antibiotics were selected and the most sensitive of them were Salmonella typhi(PTCC 1609) according to the CLSI standard table. The concentrations of 4000, 2000, 1000, 500, 250, 125, 62, 31, 16, 8, 4, 2 and 1ppm of copper nanoparticles and silver and cotrimoxazole. Microdilution broth, inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of copper, silver, and cotrimoxazole nanoparticles and their composition were determined.

**Results:** MIC and MBC obtained from copper nanoparticles (2000,4000ppm), silver nanoparticles (4,8 ppm), cotrimoxazole (500,1000 ppm), a mixture of copper and nanoparticles (31,62 ppm), a mixture of copper nanoparticles and cotrimoxazole (125,250 ppm) and a combination of silver nanoparticles and cotrimoxazole (62,125 ppm).

**Conclusion:** In the microdilution method, silver nanoparticles had the most antimicrobial activity and copper nanoparticles had the least antimicrobial activity. This experiment was repeated 3 times and the results were analyzed by one way ANOVA test (LSD) and significant in ($p < 0.05$).

**Keywords:** Salmonella typhi, copper nanoparticles, silver nanoparticles, cotrimoxazole antibiotics

# P713 - 928: EFFECTS OF NANO SILVER PARTICLES ON METHICILLIN RESISTANCE STAPHYLOCOCCUS AUREUS BEFORE AND AFTER TREATMENT

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**Background and Aim:** Nowadays nanoparticles have special application as antimicrobial compound in medicine. As well as Methicillin resistance Staphylococcus aureus could cause health problem and infection that is not response to common antibiotics, so is more attention by microbiologist. In this study effects of Nickel nanoparticles was assayed on penicilinase sequence in twenty three isolates of S. aureus.

**Methods:** So, Nickel nanoparticles were prepared from Nano Nasb Pars, Iran with four nanometer diameter. Then minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) were analyzed for Nickel nanoparticles against S. aureus by using micro broth dilution test. After that effects of Nickel nanoparticles was assayed on expression and sequence of penicilinase gene by real time PCR technique.

**Results:** Results showed that Nickel nanoparticles had antibacterial properties against S. aureus with 62 and 120 microgram per milliliter of MIC and MBC, respectively.

**Conclusion:** Also, results documented that the level of penicilinase expression significantly was decreased after. It's should be concluded that Nickel nanoparticles could inhibit the growth of S. aureus and the expression of penicilinase gene. It's should be noted that more studies are need to obtain the best results.

**Keywords:** Antibacterial effect, penicilinase gene expression, S. aureus, Nickel nanoparticle

# P714 - 949: STUDY ON THE ANTIBACTERIAL AND CLEANING PROPERTIES OF SILVER NANOPARTICLE AND ENZYMATIC DETERGENT: CASE STUDY AMYLASE

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**Background and Aim:** The antibacterial properties of silver nanoparticles can be used in the detergent industry. One of the main applications of this nanoparticle is their deposition on cloths and textiles for their self-cleaning and antibacterial ability. Moreover, different types of enzymes are important factors in the development of cleaning products, such as clothing detergents, dishwashing liquids and detergents. Enzymes help to shorten the washing time, reduce energy consumption and water to reduce the temperature of the wash, rinse and intensive environmental friendly over the reducing the amount of usage and pH. Enzymes including cellulase and lipase increase the fabric strength and sticking and the hydrolysis and solubility of dirt.

**Methods:** The aim of this project is to investigate the mutual effects of silver nanoparticles and Amylase as a detergent enzyme base on their antibacterial and cleaning properties respectively. For this a parameters influenced on their features including pH, time and concentration were monitored using central composite design (CCD).

**Results:** The washing property of amylase and antibacterial features of silver nanoparticles in each treatment are investigated based on carbohydrate destruction assay and model bacteria survive. The characteristics of amylase is study using MALDI-TOF/TOF and the silver nanoparticles physiochemical features variations are monitored using UV-Vis and DLS.

**Conclusion:** The results demonstrates that the interaction of amylase and silver nanoparticle not only causes the destruction of amylase structure, but also 80 % decrease in AgNPs antibacterial activity. So It can concluded that the washing process destroys the cloths antibacterial activity as well as reduce the washing machines performance.

**Keywords**: Enzymatic Detergent, Amylase, MIC/MBC, staphylococcus aureus, Escherichia coli

# P715 - 950: INTERACTION OF HIGH DILUTED HOMEOPATHIC DRUGS WITH MODEL BACTERIA

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**Background and Aim:** Homeopathy is a therapy based on the principle of "like-cures like." The main cause has not yet discovered the therapeutic potential of this method and perhaps the most important factor deficiency and lack of its fast spreading. Many doctors and researchers opposed to this treatment and it hypnosis, hallucinations, etc. count. It should be carefully explained the mechanism of action of a drug or a treatment of a subject and its effectiveness is another matter.

**Methods:** For this study silver base aqueous nano diluted homeopathy drugs including Argentum Nitricum (Arg. N.), Argentum Metallicum and Nitric acid in comparison with AgNO3 and silver nanoparticle were monitored based on MIC, MBC, Inhibition zone, growth curve and total protein against staphylococcus aureus, Escherichia coli.

**Results:** Silver nanoparticle exhibited significant synergistic antibacterial activity against staphylococcus aureus (MIC: >1.5 µg/mL, MBC: >6.25 µg/mL, Inhibition zone: 12 mm), Escherichia coli (MIC: >3.12 µg/mL, MBC: >12.5 µg/mL, Inhibition zone: 8 mm). On the other hand homeopathic nano dilutions of Argentum Nitricum (Arg. N.) increase in bacterial growth in first 150 growth cycle (2 days) and then reduce their growth. More over the amounts of protein production was changed as well as their protein regulation and proteomics.

**Conclusion:** From the results it can be concluded that the influences of compound (AgNO3 in this case) in the form of their raw solution, nano material and homeopathic highly dilution and are totally different. This variation can study in the case of physiological and morphological as well as protein production and growth.

**Keywords:** Homeopathic Drugs, MIC/MBC, Growth, staphylococcus aureus, Escherichia coli

# P716 - 1002: SYNERGISTIC EFFECT OF COPPER AND SILVER NANOPARTICLES ON PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Hospital infections are one of the most important problems around the world. Extensive use of chemical antimicrobial agents causes high levels of microbial resistance and antibiotic resistance is increasing rapidly. The aims of this study is evaluation of synergistic effect of copper nanoparticles (CNPs) and silver nanoparticles (SNPs) on P.aeruginosa in laboratory conditions.

**Methods:** This study was conducted in Zanjan Azad University. In order to investigate synergistic effect of CNPs and SNPs on P.aeruginosa, methods of disc diffusion and microdilution were used. Data were analyzed by using SPSS software.

**Results:** To determine the most effective antibiotic on the bacteria the antibiotics test was conducted and Gentamicine had the most effect. To determine the CNPs and SNPs and Gentamicine antibacterial activity and determination MBC and MIC against P.aeruginosa , microdilution method was used and the result was: Gentamicine (MIC 2000 ppm,MBC 4000 ppm) , SNPs (MIC 2 ppm,MBC 4 ppm) , CNPs(MIC 32 ppm,MBC 62 ppm) , CNPs and SNPs (MIC 4 ppm,MBC 8 ppm) , SNPs and Gentamicine (MIC 250 ppm,MBC 500 ppm) , CNPs and Gentamicine (MIC 16 ppm,MBC 32 ppm).

**Conclusion:** The results showed that combination of two nanoparticles of silver and copper has inhibitory and bactericidal effect on the growth of P. aeruginosa; but it is less effective than when SNPs is used alone. Also analysis of ANOVA indicates a high inhibitory effect of SNPs compared to SNPs and CNPs(P value <0.05).

**Keywords:** Copper Nanoparticle, Silver Nanoparticle, Pseudomonas aeruginosa

# P717 - 1018: THE EFFECT OF COPPER AND SILVER NANOPARTICLES ON LISTERIA MONOCYTOGENES

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**Background and Aim:** In this research, the effect of copper and silver nanoparticles on the Listeria monocytogenes was studied. In this study, antimicrobial activity of nanoparticles and antibiotics gentamycin at different concentrations on the strain was studied.

**Methods:** In this study, the most sensitive antibiotic was disc diffusion method first. Then copper and silver nanoparticles with gentamicin on Listeria monocytogenes were investigated under laboratory conditions. In order to determine the MIC and MBC of copper, silver and gentamicin nanoparticles, the macrodilution method was used.

**Results:** The results of the combination of silver nanoparticles and gentamicin (4,8 ppm), copper nanoparticles of (16,31 ppm), silver nanoparticles of (31,62 ppm), gentamicin (62,125 ppm), a mixture of copper nanoparticles and gentamicin of (250,500 ppm), a mixture of copper and silver nanoparticles of (4000,2000ppm).

**Conclusion:** The results of the review of laboratory conditions showed that the combination of silver nanoparticles and drugs compared to gentamicin could kill this bacterium and have antibacterial activity.

**Keywords:** Listeria monocytogenes, copper nanoparticles, silver nanoparticles, gentamicin

# P718 - 1057: ANTI-BACTERIAL ACTIVITY OF AMIKACIN LOADED COPPER NANOPARTICLES ON THE ESCHERICHIA COLI.

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**Background and Aim:** The worldwide escalation of bacterial resistance to conventional medical antibiotics is a serious concern for modern medicine. Copper are widely known as antibacterial, antifungal, antiviral and anti-inflammatory agent. Next to the commonly used copper ions based antimicrobial agents, commercially available copper nanoparticles have lately gathered a lot of attention. In view of this development, the aim of our study was to investigate the antimicrobial and Amikacin, copper nanoparticles and amikacin loaded copper Nanoparticles on the Escherichia coli .The synergistic action of antimicrobial agents can reduce the need for high dosages and minimize side effects.

**Methods:** Copper nanoparticle was characterised by the sccanning electron microscope and XRD.Investigating antibacterial effects according to standards laid ( CLSI), by Disc diffusion and Minimum Inhibitory Concentration (MIC) technique, including amikacin, copper nanoparticles and amikacin loaded copper nanoparticles have been obtained on the E.coli.

**Results:** SEM study revealed nanoparticles in spherical shape with (53-67nm) size distribution. The present study indicates amikacin@Cu-Nps has considerable antibacterial activity comparison with other amikacin and Cu-Nps. copper nanoparticles deserving further investigation for clinical applications.

**Conclusion:** Chronic bacterial infections are a serious, worrisome problem, mainly because of increasing resistance of bacterial strains against antibiotics. Application of nanotechnology in creating new, effective medicines enables application of innovative solutions in fighting down pathogenic microorganism.

**Keywords:** copper nanoparticles, antibacterial activity, Minimum Inhibitory Concentration

# P719 - 1137: PREPARATION OF CHITOSAN FUNCTIONALIZED END- CAPPED AG- NPS AND COMPOSITED WITH FE3O4- NPS: ANTIBACTERIAL ACTIVITY AGAINST PSEUDOMONAS AERUGINOSA (PAO- 1)

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**Background and Aim:** In this work, functionalized chitosan end- capped Ag nanoparticles (NPs) and composited with Fe3O4- NPs was prepared as pH- responsive controlled release carrier for gastric- specific drug delivery. the antibacterial properties of this material against gram- negative bacterium pseudomonas aeruginosa (PAO- 1) in agar plates was studied and accordingly based on broth micro dilution the minimum bactericidal concentration (MBC) and minimum inhibitory concentration (MIC) with respect to standard CLSI in different concentrations of CS- IMBDO- Ag- Fe3O4- NPs was calculated.

**Methods:** To determine the antimicrobial effect of bio-organic nanostructures micro plate methods were used MIC and MBC were determined by ELISA and cultivation on solid medium respectively. Finally, cell viability was assessed using MTT assay.

**Results:** The results reveal that MIC and MBC values are 50 and 1250 µg/mL, respectively. In addition, extracts of Portulaca oleracea leaves was prepared and its antibacterial activity in single and binary system with CSIMBDO- Ag- Fe3O4- NPs as synergies effect against PAO- 1 was tested.

**Conclusion:** And results shown that these materials have significant synergistic effect for each other.

**Keywords:** Ag nanoparticles, antibacterial activity, chitosan, Portulaca oleracea, progesterone, pseudomonas aeruginosa

## Probiotics and Prebiotics

### P720 - 11: ANTIOXIDANT PROPERTIES OF LACTOBACILLUS SPP. ISOLATED FROM CAMEL DOOGH COLLECTED IN GOLESTAN PROVINCE, IRAN

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**Background and Aim:** Various degenerative diseases, could be the consequence of cellular injury caused by free radicals. Recent studies showed that some probiotics especially, Lactobacilli possess antioxidant activities, and are able to decrease the risk of accumulation of ROS during ingestion of food.

**Methods:** In this study, some camel doogh were collected from Agh-ghala, Golestan province, Iran. After bacterial isolation and biochemical identification, the probiotic potential of the isolates was evaluated by pH and bile tolerance. Three resistance methods toward reactive oxygen species (ROS), such as application of hydrogen peroxide, superoxide anions and hydroxyl radicals, were used for screening of the antioxidative strains for further studding. The antioxidant activity of extracellular materials after 48 hours fermentation with antioxidative strains were determined using 2, 2-diphenyl-1-picrylhydrazyl (DPPH).

**Results:** 10 strains which were isolated from camel dough were considered Lactobacillus spp. based on their phenotypical and biochemical traits. All lactobacilli strains except L. parakefiri strain AG33d were survived after 6 h in the presence of 1.0 mM hydrogen peroxide. Between all isolates L. suebicus strain AG20 exhibited the most effective scavenging ability on DPPH radical savaging activity.

**Conclusion:** The current study provided the evidence that most of the Lactobacillus species isolated from camel dough have the potential of antioxidant activity. Therefore, these strains could be useful as starter cultures to equip antioxidants in food or as natural preservatives and may be a promising material for medicinal purposes, applied microbiology and scientific food industry.

**Keywords:** Probiotic, Lactobacillus, antioxidants

# P721 - 20: ISOLATION AND IDENTIFICATION OF LACTOBACILLUS SP .FROM TRADITIONAL YOGURT (SPAR) IN SHAHR-E BABAK AND ITS ANTAGONIC PROPERTIES ON 5 FOOD BORNE BACTERIA.

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**Background and Aim:** Lactic acid bacteria used as a starter for the production of dairy products are the main factors in fermentation and a strong protective food contributing importantly in taste, smell, and texture of food products. The present study aims at isolating and identifying Lactobacillus species from indigenous yoghurt in Shahr-e Babak city as well as studying its antagonistic properties effect on the5 food-poisoning bacteria.

**Methods:** In this experimental study, 10 samples of indigenous yoghurt (Spar) were collected from Meimand village of Shahr-e Babak City in Kerman province, Iran. After preparing serial dilution with Normal Saline 0.9%, each dilution was cultured on MRS agar media and incubated at 37°C for 48- 72 hoursin7%carbon dioxide condition. After incubation period, the diagnostic test including gram staining, catalase, sugar fermentation, and amylolytic and proteolytic activity tests were done. Antagonistic effects of each lactobacillus isolated on 5 pathogenic bacteria were tested by overlay method. DNA from the best isolates were extracted and amplified by universal primer(16SrRNA) and identified.

**Results:** The finding showed 3 bacteria had biological and antagonistic activity. Based on molecular analysis, the best bacteria were: Pedioccus pentosaceus, Lactobacillus brevis and Weissella cibaria. The gram negative bacteria were resistance.

**Conclusion:** According to the obtained results, yoghurt (Spar) consists of probiotic bacteria with remarkable biological effects usable in food and especially for gram positive bacteria medicine industry.

**Keywords:** Pathogenic bacteria, Yoghurt (Spar), Antagonistic properties, Lactobacillus

# P722 - 74: EFFECTS IMMUNOMODULATION AND ANTICANCER POTENTIALS OF CHEESE PROBIOTICS

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**Background and Aim:** Probiotics are defined asliving microorganisms that confer a health benefit on the host and they have been mostly studied in the prevention and treatment of gastrointestinaldisorders. The purpose of the present study was to review the immunomodulatoryproperties cheese probiotic strains.

**Methods:** In this review key words cheese probiotics in search engines and databanks, including Google Scholar, Elsevier Sciences, and PubMed were searched.

**Results:** Literature survey revealsbeneficial potentials of cheese probiotic strains in various ways like lowering cholesterollevels, improving immune system, balancing gut micro flora and preventingconstipation, diarrhea and bloating, preventing fungal infection and improvingdigestibility of food constituents and improves immune response andanticarcinogenic activity. Role of probiotics in improvement ofimmunity, production of cytokines and on immune function has been evaluated. Taken together, all the beneficial immunological potentials of probiotic immunotherapy could be of clinical significance. Probioticimmunotherapy using foodsprobiotics could be an emerging field of disease managementthrough the diet. However, molecular mechanisms leading to foods probiotics - inducedimmunomodulation are poorly understood.

**Conclusion:** Thus, we strongly recommend that cheese probiotics could be further developed as a possible potential universal antineoplasticagent for multitargeted therapy, which is not only cost effective but alsoeasily available and clinically safe for human trials.

**Keywords:** Cheese Probiotic, Anticancer, Immunomodulation

# P723 - 125: INVESTIGATING THE EFFECTS OF LACTOBACILLUS DELBRUECKII ON BLOOD SUGAR AND INSULIN LEVEL IN DIABETIC MICE

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**Background and Aim:** Lactobacilli are gram positive microorganisms that are beneficial for human health. They are often found in materials like probiotic dairy or supplements. According to some studies, Lactobacilli play a significant role in improving symptoms of diabetes and reducing blood sugar level. The present study probes into the effects of oral administration of Lactobacillus Delbrueckii on reducing blood sugar level in diabetic mice.

**Methods:** In this study, 28 female mice were supplied. Then, 14 of them were made diabetic through intraperitoneal injection of streptozocin (180 mg/kg). After 7 days, a blood sugar test was applied to verify their being diabetic. One group of the mice was fed with Lactobacillus Delbrueckii (1.5×108 CFU/mouse) and carrot juice. The second diabetic group, on a daily basis, was treated with only carrot juice (control group). The blood sugar level and signs of improvements in all of the groups were considered weekly. After four weeks, the mean of blood sugar and insulin serum levels in different groups were compared.

**Results:** The results showed that in comparison with the control group, the symptoms of diabetes (Polyuria and Polydipsia) and blood sugar level in diabetic mice fed with Lactobacillus Delbrueckii improved significantly. In addition to it, investigation of insulin level in the mice treated with Lactobacillus Delbrueckii showed that they increased significantly in comparison with that of the control group.

**Conclusion:** The results showed Lactobacillus Delbrueckii improved the symptoms of diabetes and blood sugar level in diabetic mice.

**Keywords:** Lactobacillus Delbrueckii, diabetes, blood sugar, insulin

# P724 - 202: EFFECT OF LACTOBACILLUS DELBRUECKII ON SESTRIN 3 IN NORMAL AND STZ-INDUCED DIABETIC MICE

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**Background and Aim:** Probiotics are friendly bacteria that are found in foods such as yogurt and in pill supplements and are important for good health. Sestrin 3 liver-specific knockout mice exhibit insulin resistance and glucose intolerance, and Sestrin 3 transgenic mice were protected against insulin resistance induced by a high-fat diet. The aim of this study is an investigation of the anti-diabetic effect of Lactobacillus delbrueckii PTCC1057 on diabetic mice Sestrin 3.

**Methods:** 20 female mice ranging from 6 to 8 weeks old weighting 20 to 25 grams were selected. Then, at 10 of them 180 mg/kg streptozotocin was administered as intra peritoneal injection. After ten days, level of their blood sugar was measured and the mice whose blood sugar level was over 200 mg/d1 were considered to be diabetic. Then the mice were orally administered 0.1 ml of PBS (control group) or Lactobacillus delbrueckii PTCC1057 (3x107 CFU/ml) (experimental group) one time a day for 4 weeks. Finally, their serum was extracted and ELISA test was administered to these serums with ELISA test kit for Sestrin 3.

**Results:** Sestrin 3 insignificantly decreased in diabetic control group in comparison with non-diabetic control group and it insignificantly increased in diabetic experimental group in comparison with diabetic control group.

**Conclusion:** We suggest that the Lactobacillus delbrueckii PTCC1057 used in this study may have beneficial anti-diabetic effects. Further clinical trials to confirm these effects should therefore be conducted.

**Keywords:** Lactobacillus delbrueckii, Diabetes, Anti diabetic, Probiotics, Streptozotocin, Sestrin 3

# P725 - 223: ANTIMICROBIAL EFFECT OF CASEINATE HYDROLYSATE BY TWO ISOLATES OF LACTIC ACID BACTERIA

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**Background and Aim:** Lactic acid bacteria are gram positive bacteria that can be used as probiotics. FDA/WHO define them as "live microorganisms that can confer health benefits when introduced in sufficient number to the body." On the other hand, as antimicrobial resistance is one major challenge, researchers turn to novel therapeutic alternatives such as antimicrobial peptides. One resource is milk protein, casein that can be broken to antimicrobial peptides by probiotics.

**Methods:** In this research, we tested two isolated lactic acid bacteria from homemade and industrial dairy products of Isfahan. The identification was confirmed by API ™ kit. The proteolysis activity of strains was assayed by skim milk agar and analyzing the formation of the halo of proteolysis on the plates. As one new approach, the sodium caseinate supernatant of positive proteolytic strains was tested for antibacterial activity against Escherichia coli and Staphylococcus aureus. At the end to delineate the concentration of functional peptides, 96 well antimicrobial test and also Bradford test were performed.

**Results:** Based on API results, the two strains were Lactobacillus plantarum and Lactococcus lactis and they both were proteolytic bacteria. They were able to inhibit the growth of Staphylococcus aureus but didn't have any effect on Escherichia coli. Additionally, in terms of Bradford assay, the concentration of sodium caseinate hydrolysate that could inhibit Staphylococcus aureus was 0.61 mg/ml and 0.047 mg/ml respectively.

**Conclusion:** As the concluding point, these two strains can be used as additives to dairy products and also can be utilized separately as one therapeutic agent.

**Keywords:** Probiotics, Lactobacillus plantarum, Lactococcus lactis subsp lactis, milk, sodium caseinate

# P726 - 228: EVALUATION ANTIMICROBIAL EFFECTS OF SUPERNATANT L.FERMENTUM ON ESCHERICHIA COLI BACTERIA WITH AGAR WELL DIFFUSION

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**Background and Aim:** Bacterial resistance against antibiotics increasing for delet pathogen bacterial we can use of probiotics. Probiotics are microbial food supplements that have useful effects on human health with maintaining microbial balance of intestine. The aim of this study is Evaluation anti-microbial effects of supernatant lactobacillus fermentum on E.coli bacteria.

**Methods:** First of all we prepared 48 hourly supernatant with lactobacillus fermentum PTCC 1638 and its anti-microbial effect with Agar well diffusion on E.coli bacteria ATCC 25922 Investigated. Also determined the minimum inhibitor concentration (MIC) and minimum bactericidal concentration (MBC).

**Results:** Results show that supernatant lactobacillus fermentum has anti- microbial effect on E.coli With maximum halo diameter 18 mm. Also the rate of 1/2 of supernatant volume determined as mic point.

**Conclusion:** supernatant Lactobacillus fermentum 48 hourly has much control on Escherichia coli.

**Keywords:** Supernatant, Lactobacillus Fermentum, Escherichia Coli

## P727 - 231: PROBIOTICS FOR DIABETES PREVENTION IN OBESITY PRONE

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**Background and Aim:** Diabetes is a chronic metabolic disorder in the body in which body's ability to completely metabolize glucose decreases. So the amount of blood sugar increases. The reasons of diabetes haven't yet been recognized well, but it's definite that some genetic factors, fatness and inactivity play an important role in getting some types of diabetes. Researchers could make some positive steps toward dealing with this problem in recent years by using probiotics. Probiotic are alive and active microorganism (the bacteria and yeast) that are of salutary benefits to the host by lying in adequate numbers in different parts of body (especially intestine), by their biological function, mostly by keeping and improving the balance of intestinal bacterial flora between useful and harmful organisms. This article reviews the done researches on the effect of probiotics on the treatment of fatness and diabetes type 2.

**Methods:** The subject-related articles were searched on different websites. And clinical trials and different articles that indicated the effect of probiotics on the treatment of fatness and diabetes type 2 were studied.

**Results:** The studies show that probiotics can have positive effects of preventing and treating fatness and diabetes type 2. Also digesting bacteria of probiotics causes changes in many metabolic pathways related with carbohydrate metabolism.

**Conclusion:** Probiotics can be used in the future as a new solution for the treatment of diabetes type 2, but for this action there is a need for more studies in this field.

**Keywords:** Probiotic, diabetes type 2, fatness, prevention

# P728 - 263: THE EFFECT OF PROBIOTIC LACTOBACILLUS ON SERUM ANTIOXIDANT STATUS IN STREPTOZOTOCIN-INDUCED DIABETIC RATS.

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**Background and Aim:** Blood glucose leads to increased production of reactive oxygen species (ROS) and oxidative stress in diabetic patients. Recent research suggests that use of probiotics had beneficial effects on biomarkers of oxidative stress.The aim of this study was to determine effects of probiotics Lactobacillus acidophilus and Lactobacillus casei on biomarkers oxidative stress in streptozotocin-induced diabetic rats.

**Methods:**32 male wistar rats ,were assigned to 4 groups randomly: group CN :consumed a normal standard diet(with buffer saline 0.2), group CL (probiotic diet 109cfu / ml ) group D (diabetic rats+high fat diet),group DL (diabetic rats+ high fat +probiotic).After 6 weeks levels of malondialdehyde, total antioxidant and antioxidant enzymes(catalase,glutathion peroxidase and superoxide dismutase) were measured.

**Results:**A significant decreases in serum levels of malondialdehyde and significant increase in levels of antioxidant enzymes (catalase and glutathion peroxidase ) and total antioxidant capacity were observed in the probiotic supplements groups ($p<0.05$).

**Conclusion:** Consumption of probiotics Lactobasilus cidophilus and Lactobacillus casei had beneficial effects on biomarkers of oxidative stress in diabetic rats.

**Keywords:** Diabetes, oxidative stress, probiotic

# P729 - 264: THE EFFECT OF PROBIOTIC LACTOBACILLUS ON THE SERUM LEVEL OF LIPID PROFILES IN STREPTOZOTOCIN-INDUCED DIABETIC RATS

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**Background and Aim:** Diabetes mellitus is a metabolic disorder that associated with disturbances of lipid metabolism.Several studies have indicated that supplementation with probiotics improves lipid metabolism. The purpose of this study was to investigate the probiotic Lactobacillus effects on the serum level of lipid profiles in streptozotocin-induced diabetic rats.

**Methods:** 32 male wistar rats ,were assigned to 4 groups randomly: group CN :consumed a normal standard diet(with buffer saline 0.2), group CL (probiotic diet 109cfu / ml ) group D( diabetic rats+high fat diet),group DL( diabetic rats+ high fat +probiotic).After 6 weeks levels of lipid profile( HDL,LDL.cholestrol , triglyceride) were measured.

**Results:** A significant decreases in serum levels of LDL, cholestrol and triglyceride and significant increase in levels of HDL were observed in the probiotic supplements groups ($p<0.05$).

**Conclusion:** It is suggested that probiotic Lactobacillus consumption may be used to improve dyslipidemia in diabetic rats.

**Keywords:** Lactobacillus Probiotic, Lipid profiles, Diabetes

# P730 - 309: LACTOBACILLUS CASEI PROTEOME EXTRACTION: COMPARISON OF DISRUPTION METHODS

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**Background and Aim:** Lactobacillus casei (L. casei) is a difficult-to-lyse bacterium. The key step in detection and identification of extra- and intra-cellular proteins is to find the best method of cell lysis and extraction of proteins from the lysed cells. To develop an optimized proteome extraction protocol for L. casei, the effectiveness of two cell lysis methods (sonication and freeze-thaw) in the presence of a lysis buffer was compared.

**Methods:** L. casei was grown in MRS medium at 37 °C until OD600 = 1.5 was achieved. Bacterial cells were collected by centrifugation at 4000 g for 10 min at 4 °C. The pellets were suspended in a lysis buffer (50 mM Glucose, 25 mM Tris–HCl, 10 mM EDTA, 20 mg/ml Lysozyme, pH 8.0) and exposed to sonication or consecutive freeze–thaw cycles. The cell protein extracts were fractionated by a 12% gel of sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE).

**Results:** The results showed that, both methods can be used to lyse L. casei. More clear and consistent strips were detected by SDS-PAGE when proteins extracted by sonication method. The results indicated that 16-h-old L. casei culture as the best cell age produced good banding profiles.

**Conclusion:** This work is an attempt to assist researchers in effective extraction of proteins from L. casei. Sonication represents a rapid and effective method of extracting the proteome of L. casei. The results indicated that the age of the cells and extraction method should be taken into consideration during extraction of the whole-cell protein.

**Keywords:** Lactobacillus casei, Proteome, SDS-PAGE, Sonication, Freeze-thaw

# P731 - 383: ISOLATION AND IDENTIFICATION OF DOMINANT PROBIOTIC BACTERIA ISOLATED FROM YOGURT IN KERMANSHAH PROVINCE.

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**Background and Aim:** Probiotic are non-pathogenic microorganisms that when consumed enough, they have beneficial effect on host health. Some fermented dairy products included various kind of yogurt, cheese and fermented milk are rich of probiotic bacteria. It is important to culture and keep the local probiotic bacteria. Therefor our purpose of this study was isolation and identification of probiotic bacteria from traditional yogurt in Kermanshah using culture and PCR-Sequencing.

**Methods:** The present study was conducted during the period from October to end November in 2015, a total of 15 Sample yogurt, were collected from Kermanshah province. The 100 µl from each diluted samples were then cultured, on MRS agar medium and incubated at 37°C. Then 4-5 colonies were selected from each plate. After DNA of each plate were isolated using DNA extraction kits. PCR technique was used for amplification of genus-specific target and universal primer. Finally, each sample with single band were selected for 16SrRNA sequencing using .

**Results:** In the present study, Different colonies were isolated from culture medium All isolates were catalase-negative, gram positive bacilli. In yogurt samples 24.35% Lactobacillus delbrueckii, 8.97% Lactobacillus helveticus, 7.69% Lactobacillus fermentum, 2.56% Lactobacillus rhamnosus, 3.84% Lactobacillus paracasei, species were isolated from samples.

**Conclusion:** Probiotic bacteria are non pathogenic microorganism that have considered due to their nutritional value and therapeutic effect and have benefical effects on host health. in our result L.delbruekii, L.helveticus, were the predominant isolates from of samples yogurt. Oure finding different groups of probiotic microorganisms were isolated from samples and they can be used as functional foods.

**Keywords:** Probiotic, yogurt

# P732 - 417: HONEY AND SKIN: A REVIEW OF EFFECTS OF HONEY ON SKIN INFECTIONS AND WOUND HEALING IN IRAN'S STUDIES

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**Background and Aim:** The skin is the first defense barrier against microbial invasion. Disruption of this barrier can increase the possibility of the risk wounds and skin infections. Control of skin damages especially skin infections have attracted many researches to find new approaches for skin treatment or management. Honey is one of these agents that its use as dressing and in topical application is increasing. In this article, the scientific findings of Iranian researchers about effects of honey on skin infections and skin repair are reviewed.

**Methods:** Evaluation and scientific classification searches in electronic databases, especially Google, Scientific Information Database (SID), Iranian research institute for information (IranDoc) are done.

**Results:** The main scientific findings in Iran about honey topical application and its beneficial effects on wounds could be classified as follows: 1. Historical documents about topical use of honey 2. Evaluation of antibacterial effect of honey especially against Pseudomonas aeruginosa 3. Experimental studies about burn wound, full thickness wound and open cutaneous wound in laboratory animals 4. Clinical trials related to wound and diabetic foot ulcer using honey

**Conclusion:** There are some researches in Iran indicating beneficial effects of honey for control of skin infectious and wound healing. However further in vivo and in vitro experiments would be necessary to elucidate the exact role of honey in wound healing process and skin infections control.

**Keywords:** Honey, skin infection, wound healing

# P733 - 422: THE ROLE OF PROBIOTICS IN THE TREATMENT OF PARASITIC DISEASES: A SYSTEMATIC REVIEW

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**Background and Aim:** Probiotics are widely identified tool for destroying Pathogenic bacteria, and may be beneficial in treating parasites as well. The aim of this review was to explore the role of probiotics in the treatment of parasitic diseases through a systematic review of the literature.

**Methods:** Academic databases including MEDLINE, EMBASE, and the Cochrane library from 1997 up to 2017 and keywords including probiotics, parasites treatment and control were searched. Totally, 56 articles were found. Finally, 30 articles were included in the research topic.

**Results:** Parasites and probiotics that are effective on them are as follows: Cryptosporidium parvum (Lactobacillus acidophilus, L.reuteri, L. casei shirota , L. rhamnosus , Bacillus brevis, Enterococcus Faecium, Pseudomonas alcaligenes, Bifidobacterium longum, B. breve), Giardia lamblia (L. casei, L. Johnsonii), Ascaris suum (Bifidobacterium lactis), Shistosoma mansoni (Zymomonas mobilis, L. acidophilus, L. salivarius), Eimeria tenella (Mitogrow, Primalac, Mitomax ), Toxocara canis(E. faecalis), Trichinella spiralis(L. casei), Babesia microti(L. casei), Plasmodium chabaudi(L. casei), Trypanosoma cruzi(L. casei), Trypanosoma brucei brucei(S.cerevisiae). Toxoplasma gondii (Bifidobacterium), Enterocytozoon bieneus(L. acidophilus), Strongyloides venezuelensis (B. animalis).

**Conclusion:** Based on this research, probiotics can be effective in treatment of parasitic diseases. Taking probiotic supplements may help our body work more efficiently at killing parasites.

**Keywords:** Probiotics, parasites, treatment, control

# P734 - 428: SURVIVAL OF POTENTIAL PROBIOTIC BACTERIA LACTOBACILLUS ACIDOPHILUS IN CONCENTRATED COW'S YOGHURT INCLUDING GHAZVAN (PISTASICA ATLANTICA)

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**Background and Aim:** Probiotic products consuming have a lot of benefits on consumer's health by gastrointestinal bacteria improvement. Ghazvan was used as a flavor additive in drinking yogurt for years and could be a suitable prebiotic source in fermented foods as well. The main objective of recent study is evaluation of Ghazvan effect on surveillance of probiotic bacteria Lactobacillus acidophilus in concentrated cow's yogurt during the storage time.

**Methods:** Yogurt starters and probiotic bacteria Lactobacillus acidophilus in lyophilize ampoules shapes were bought from PTCC company and prepared (inoculated dose amount was 5×107 cfu/ml). Concentrated yogurts were produced by pasteurized cow milk in 4 treatments and 3 frequents, different dose of Ghazvan powder (0.5-1%) and 1% prepared probiotic bacteria were inoculated. All of the samples were kept in refrigerate for 3 weeks. The microbial tests were done in 1st, 7th, 14th and 21st days post-production.

**Results:** The results determined that probiotic bacteria were increased during storage and had good viability in all of samples. The maximum number of microbes and the most increasing of them, were found in concentrated yogurt including 0.5% Ghazvan. As on day 21st, there was an increasing to 8.9×109 cfu/g.

**Conclusion:** Evaluation of statistical analysis, emphasizes on sustainability and increasing the probiotic bacteria in the presence of ghazvan and determined that the 0.5% of Ghazvan have a positive impact on number and viability of bacteria significantly ($p<0.05$). Therefore using of ghazvan as a healthy additive is recommended in order to keep and survival of probiotic bacteria in concentrated yogurt during storage.

**Keywords:** Probiotic bacteria, Lactobacillus acidophilus, concentrated yogurt, Ghazvan

# P735 - 433: EFFECTS OF PROBIOTIC INTAKE ON DISABILITY AND MENTAL HEALTH IN SUBJECTS WITH MULTIPLE SCLEROSIS

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**Background and Aim:** Multiple sclerosis (MS) is an inflammatory disease affecting mostly young adult with multifactorial etiology. Few studies have indicated that administration of probiotic resulted in suitable trends in findings of clinical sign in animal model of MS. This trial was performed to evaluate the effects of probiotic intake on clinical symptom and mental health in subjects with MS.

**Methods:** This randomized double-blind placebo-controlled clinical trial was conducted among 60 MS patients. Participants were randomly allocated into two groups to receive either a probiotic capsule (n=30) or placebo containing starch (n=30) for 12 weeks. Clinical symptom by expanded disability status scale (EDSS) scoring and mental health by beck depression inventory (BDI), general health questionnaire-28 (GHQ-28) and depression anxiety and stress scale (DASS) were recorded at the baseline and 12 weeks after the intervention. This clinical assessment was registered in the Iranian website for registration of clinical trials (http://www.irct.ir: IRCT201511015623N59).

**Results:** Compared with the placebo, probiotic intake improved EDSS (-0.3±0.6 vs. +0.1±0.3, P=0.001), beck depression inventory (-5.6±4.9 vs. -1.1±3.4, P<0.001), general health questionnaire (-9.1±6.2 vs. -2.6±6.4, P<0.001) and depression anxiety and stress scale (-16.5±12.9 vs. -6.2±11.0, P=0.001).

**Conclusion:** Our study demonstrated that the use of probiotic capsule for 12 weeks among subjects with MS had favorable effects on EDSS and mental health.

**Keywords:** Probiotic, multiple sclerosis, disability

# P736 - 454: SENSORY PROPERTIES OF CONCENTRATED COW'S YOGURT INCLUDING POTENTIAL PROBIOTIC BACTERIA LACTOBACILLUS ACIDOPHILUS AND GHAZVAN (MOUNTAIN PISTACHIO)

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**Background and Aim:** Probiotics can be named as one of the most popular smart products that are useful to digest food efficiently. Ghazvan (mountain pistachio) is used as a flavoring and freshener in Dough and yogurt. The purpose of this study is to identify the sensory characteristics of concentrated yogurt containing Ghazvan and probiotic bacteria.

**Methods:** The different dose of ghazvan (0.5 and 1%) was added to cow's pasteurized milk to evaluation of effects on the sensory properties (including taste and odor, appearance and oral texture). To produce probiotic yogurt, starters in a specific amount and probiotic bacteria Lactobacillus acidophilus (1%) were added to it. After dewatering, the samples were stored for three weeks at 5 ± 1°c and the sensory test were done on days 1, 7, 14 and 21 of the manufacture. A five-point hedonic test was provided to evaluation with 9 panelists.

**Results:** Variance analysis of data determined that there is a significant statistical difference between treatments in terms of effect on taste and odor, appearance and oral texture (p?0.01) in first week of storage. There is not this different in 2nd and 3rd weeks. The result of the comparison of the meanings determined that the highest score belongs to the treatments containing: C: 0.05% of Ghazvan, E: 0.05% of Ghazvan and 1% Probiotics and F: 1%probiotic without Ghazvan.

**Conclusion:** According to the results, using of 0.5% of Ghazvan has a positive effect on the sensory properties of concentrated yogurt and adding 1% of Lactobacillus acidophilus can develop these characteristics.

**Keywords:** Concentrated yogurt, Sensory properties, Lactobacillus acidophilus, Ghazvan

# P737 - 455: EFFECTS OF PROBIOTIC ON BIOCHEMICAL PARAMETERS IN SUBJECTS WITH MULTIPLE SCLEROSIS

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**Background and Aim:** Multiple sclerosis (MS) is an inflammatory disease affecting mostly young adult with multifactorial etiology. It is reported that 2.5 million persons endure from MS. Prior studies have demonstrated that activated inflammatory, oxidative pathways and gut microbiota dysbiosis play a substantial function in MS pathophysiology. This trial was performed to evaluate the effects of probiotic intake on disability, mental health, inflammatory and oxidative stress parameters in subjects with MS.

**Methods:** This randomized double-blind placebo-controlled clinical trial was conducted among 60 MS patients. Participants were randomly allocated into two groups to receive either a probiotic capsule (n=30) or placebo containing starch (n=30) for 12 weeks. Biochemical parameters including malondialdehyde (MDA), glutathione (GSH), total antioxidant capacity (TAC), high-sensitivity C-reactive protein (hs-CRP) and plasma nitric oxide metabolites by routine laboratory methods were recorded at the baseline and 12 weeks after the intervention. This clinical assessment was registered in the Iranian website for registration of clinical trials (http://www.irct.ir: IRCT201511015623N59).

**Results:** Changes in high-sensitivity C-reactive protein (-1.3±3.5 vs. +0.4±1.4 µg/mL, P=0.01), plasma nitric oxide metabolites (+1.0±7.9 vs. -6.0±8.3 µmol/L, P=0.002) and MDA (+0.009±0.4 vs. +0.3±0.5 µmol/L, P=0.04) in the probiotic group were significantly different from the changes in these parameters in the placebo group.

**Conclusion:** Our study demonstrated that the use of probiotic among subjects with MS had favorable effects on inflammatory factors and MDA levels.

**Keywords:** Probiotic, multiple sclerosis, inflammation, oxidative stress

# P738 - 462: EUKARYOTIC MICROORGANISMS AS NEW GENERATION OF PROBIOTICS

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**Background and Aim:** Although the epicenter of probiotic research has been prokaryotes, scientific and commercial interest in eukaryotic probiotics has significantly increased in recent years, so in this paper we reviewed the current knowledge about eukaryotic probiotics

**Methods:** Limited Information about eukaryotic probiotics and the diversity and function of the eukaryotic microbiota in the gut of human and other animals, have lead to the need of deeper research as to how to use them properly and Definitely successful application of modern technologies will allow in developing tools for analyzing the functionality of these strains as probiotics. Also metagenomic and metaproteomic approaches will certainly help to develop the new generation of eukaryotic probiotics.

**Results:** In addition to prokaryotes, eukaryotic microorganisms could be a good candidate as probiotics. The common examples of these microorganisms with probiotic properties include the genus Saccharomyces, Pichia, Metschnikowia, Yarrowia, Candida, Debaryomyces, Isaatchenkia, Kluyveromyces, and Aspergillus. So the use of eukaryotic as probiotics is limited and only a few of them are commercially available for human and animal practices, for example among these microorganisms, Saccharomyces boulardii is the only yeast strains commercialized for human uses.

**Conclusion:** Interested about eukaryotic probiotics has increased in recent years owing to their properties and advantages over prokaryotic probiotics such as lack of transfer of antibiotic resistance genes and the possibility of using them during antibiotic therapy. Likewise according to the researches, these eukaryotic organisms have a great potential for developing of new recombinant probiotics with desired properties.

**Keywords:** Eukaryotic microorganisms, probiotics

# P739 - 470: EVALUATION OF PROBIOTIC BACTERIA LACTOBACILLUS CASEI SUBSP. CASEI SURVIVABILITY IN CONCENTRATED COW'S YOGHURT INCLUDING GHAZVAN (PISTASICA ATLANTICA)

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**Background and Aim:** In recent years, the health effects of Probiotics which is caused by their special activity and after the establishment in the intestine, is taken into consideration. Ghazvan was used as a flavor additive in dairy products and could be a suitable prebiotic source in fermented foods as well. The objective of recent study is evaluation of Ghazvan effect on surveillance of probiotic bacteria Lactobacillus casei subsp. casei in concentrated cow's yogurt during the storage time.

**Methods:** Yogurt starters and probiotic bacteria Lactobacillus casei were provided and prepared (inoculated dose amount was 1.2×108 cfu/ml). Concentrated yogurts were produced by pasteurized cow milk in 4 treatments, different amounts of Ghazvan powder (0.5-1%) were added in two of treatments and 1% prepared probiotic bacteria were inoculated in 3 of them. After dewatering, all of the samples were kept in refrigerate for 3 weeks. The microbial tests were done in 1st, 7th, 14th and 21st days' post-production using MRS Vancomycin agar.

**Results:** The results determined that probiotic bacteria were increased during storage and had good viability in all of samples. The maximum number of microbes and the most increasing of them, were found in concentrated yogurt including 0.5% Ghazvan. As on day 21st, there was an increasing to 9.3×108 cfu/g and there was statistical difference between this treatment and control one ($p<0/05$).

**Conclusion:** Evaluation of statistical analysis determined that using of Ghazvan (especially in 0.5% W/W) as a healthy additive is recommended in order to keep and survival of probiotic bacteria in concentrated yogurt during storage.

**Keywords:** Probiotic bacteria, Lactobacillus casei, concentrated yogurt, Ghazvan

# P740 - 478: CHARACTERICTICS OF BIO - YOGURT SUPPLEMENTED BY DIFFERENT CONCENTRATION OF INULIN

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**Background and Aim:** The objectives of this study, were to investigate the effects of different content of yogurt starter/probiotic bacteria, storage time (1,8,15 das) and different concentration of inulin(0.25,0.5,0.75%) on the microflora characteristics of bio-yogurt.

**Methods:** The milk were inoculated with mixed yogurt culture and the probiotic strains of Lactobasillus acididophilus PTCC 1643 and Bifidobacterium Bifidum PTCC 1644 were obtained from the persian type culture collection. Analitical methods: starter bacterial and probiotic bacterial count and sensor evalution were carried.

**Results:** The number of S. thermophilus and L. delbrueckii subsp. Bulgaricus were found to be higher in the samples with higher levels of starter. The numbers of L. acidophilus and B. bifidum were found to be higher in the samples with higher levels of added probiotic bacteria. The counts of S. thermophilus increased slowly during storage up to day 7 and decreased later L. delbrueckii subsp. Bulgaricus, B. bifidum and L. acidophilus counts, decreased during the storage period. Increasing of inulin improved the viability of B. bifidum and L. delbrueckii subsp. Bulgaricus and it had no important effect on the viability of L. acidophilus and made the environment unfavourable for the growth of S. thermophilus.

**Conclusion:** Increasing of inulin improved the viability of B. bifidum and L. delbrueckii subsp. Bulgaricus and it had no important effect on the viability of L. acidophilus and made the environment unfavourable for the growth of S. thermophilus.

**Keywords:** Probiotic, yogurt, inulin

# P741 - 484: THE EFFECT OF LACTOBACILLUS BACTERIOCIN ISOLATED FROM JUG AGAINST METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS

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**Background and Aim:** Probiotics are live microorganisms that when exist in proper values in gastrointestinal tract, leave a beneficial effect on it. Among, Lactobacillus ate commonest bacterial known as probiotics. The aim of the current study is evaluating the inhibitory properties of bacteriocin gained from isolated lactobacillus from jug-cheese on Methicillin Resistant Staphylococcus aureus growth.

**Methods:** For this purpose,5 different strains of lactobacillus and one strain of Bifid¬obac¬teri¬u¬m isolated from local jug cheese samples and identified. Firstly, bacteria cultured in specific medium and in anaerobically environment then centrifuged. Briefly, in order to prepare bacteriocin from lactobacillus bacteria, firstly, cultured separately in 10 ml MRS medium for 24-48 hour in anaerobically condition at 30 ° C. After growth, bacteria centrifuged for 15 minutes at 350 rpm at 4° C, and the sediment was discarded and the supernatant as a bacteriocin sources was kept at -80 ° C. Also Sephadec G-150 column used to separate and purification of bacteriocin.

**Results:** The results from selective studies showed that the bacteriocin produced by lactobacillus fermentum has the highest bactericidal activity against Methicillin Resistant Staphylococcus aureus.

**Conclusion:** Based on the finding of this study we conclude that there is some lactobacillus typed in jug cheese that could show antibacterial properties by producing multiple bacteriocins that stops the in-vitro growth of some bacterial pathogens such as Methicillin Resistant Staphylococcus aureus. But in order to obtain the results, more field experiments seem necessary.

**Keywords:** bacteriocin, cheese, lactobacillus, Methicillin Resistant Staphylococcus aureus

# P742 - 492: ISOLATION AND MOLECULAR IDENTIFICATION OF LACTOBACILLUS BULGARICUS FROM LOCALLY DAIRY PRODUCT OF THE LORESTAN PROVINCE

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**Background and Aim:** Lactobacillus bulgaricus is involved in lactic acid family. This species has characteristics such as producing amino acids and vitamins and probiotics properties. This study is aimed to identify and isolate Lactobacillus bulgaricus based on molecule.

**Methods:** All samples were collected from local dairy products in Lorestan province. Initially, they were cultivated in Mrs Agar environment. Plates were stored in a stove by 37 – 40 °C for 72 hours. Bacteria identification was conducted according to interior transcription of the area 16SrRNA. Primer design was provided by using BLAST primary software. PCR reaction was performed based on initiative – 16SrRNA. The products of PCR were successfully determined and were analyzed.

**Results:** The observed bacteria developing was monitored in 37 – 40 °C. Existing anticipated band of 232 bp demonstrated supporting special area of 16SrRNA. Subsequent analytical results showed 100% similarity among subsequent nucleotide of 16SrRNA samples and genes.

**Conclusion:** This paper concluded that supporting 16SrRNA area is an appropriate technique for identifying Lactobacillus bulgaricus. Also, isolated bacteria is a strong volunteer for applying in food and drug industry.

**Keywords:** Lactobacillus bulgaricus, interior duplicated propagative space explorer, 16SrRNA, PCR

# P743 - 494: ISOLATION AND MOLECULAR IDENTIFICATION OF ENTEROCOCCUS FAECIUM FROM LOCALLY DAIRY PRODUCT OF THE LORESTAN PROVINCE

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**Background and Aim:** Enterococcus faecium is salt- and bile-resistance bacteria. Enterococcus faecium material is considered as the most important challenges about lactic acid, which is due to interference of this group in putrefaction and fermentation of foods. Also, they are used as probiotic. This study is aimed to identify and isolate Enterococcus faecium based on molecule.

**Methods:** All samples were collected from local dairy products in Lorestan province. Initially, they were cultivated in M17 Agar environment. Plates were stored in a stove by 37 – 40 °C for 72 hours. Bacteria identification was conducted according to interior transcription of the area 16SrRNA. Primer design was provided by using BLAST primary software. PCR reaction was performed based on initiative – 16SrRNA. The products of PCR were successfully determined and were analyzed.

**Results:** The observed bacteria developing was monitored in 37 – 40 °C. Existing anticipated band of 112 bp demonstrated supporting special area of 16SrRNA. Subsequent analytical results showed 100% similarity among subsequent nucleotide of 16SrRNA samples and genes.

**Conclusion:** This paper concluded that supporting 16SrRNA area is an appropriate technique for identifying Enterococcus faecium. Also, isolated bacteria is a strong volunteer for applying in food and drug industry.

**Keywords:** Enterococcus faecium, interior duplicated propagative space explorer, 16SrRNA, PCR

# P744 - 497: ISOLATION AND MOLECULAR IDENTIFICATION OF STREPTOCOCCUS THERMOPHILUS FROM LOCALLY DAIRY PRODUCT OF THE LORESTAN PROVINCE

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**Background and Aim:** Streptococcus thermophilus is involved in lactic acid family. This species has characteristics such as producing amino acids and vitamins and probiotics properties. This study is aimed to identify and isolate streptococcus thermophilus based on molecule.

**Methods:** All samples were collected from local dairy products in Lorestan province. Initially, they were cultivated in M17 Agar environment. Plates were stored in a stove by 37 – 40 °C for 72 hours. Bacteria identification was conducted according to interior transcription of the area 16SrRNA. Primer design was provided by using BLAST primary software. PCR reaction was performed based on initiative – 16SrRNA. The products of PCR were successfully determined and were analyzed.

**Results:** The observed bacteria developing was monitored in 37 – 40 °C. Existing anticipated band of 157 bp demonstrated supporting special area of 16SrRNA. Subsequent analytical results showed 100% similarity among subsequent nucleotide of 16SrRNA samples and genes.

**Conclusion:** This paper concluded that supporting 16SrRNA area is an appropriate technique for identifying Streptococcus thermophilus. Also, isolated bacteria is a strong volunteer for applying in food and drug industry.

**Keywords:** Streptococcus thermophilus, interior duplicated propagative space explorer, 16SrRNA, PCR

# P745 - 501: SURVEY OF CUMIN EXTRACT AND STORAGE CONDITION ON VIABILITY OF PROBIOTIC BACTERIA IN SET YOGHURT

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**Background and Aim:** Considering the high consumption of yoghurt, this product is one of the most appropriate options and a suitable bed for transmission of probiotic bacteria into human body. Presently, probiotic yoghurt is produsedand purveyed by means of imported starter cultures present in the market. In most of the cases, the bacteria species used in this starter are Lactobacillus acidophilus and Bifidobacterium animalis, sp Bifibum. Constitutional condition for proper efficacy of thease bacteria in the body its adequate presence in the product during production process and its viability in the preservation period to the consumption time.

**Methods:** This study surveys the effect of thermal-care and cumin extract upon the viability of probiotic bacteria. In this regard, the cumin extract with two levels of 5% and 10% was added to the milk used to prepare yoghurt then prepared yogurt stpraged in two temperatures, 4° c and 15°c. Besides the species of bacteria utilized was Lactobacillus acidophilus and Bifido bacteriuom animalis sp bifidum.

**Results:** The effect of the cumin concentration upon the count of Lactobacillus acidophilus was not significant (P< 0/05). The effect of temperature upon decreasing the count of this bacteria was significant and by raising the temperature and preservation period this effect increased. The temperature and preservation period affected the viability of this bacteria and caused decrease of its count. Totally, rising the temperature and preservation period indicated negative affect upon these parameters.

**Conclusion:** Production of the yoghurt with cumin extract as a valuable nutrition.

**Keywords:** Cumin extract, storage condition, probiotic bacteria

# P746 - 521: THE PROTECTIVE EFFECTS OF PROBIOTICS IN CANCER THERAPY

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**Background and Aim:** The gut microbiota has an important effect on many aspects of human physiology. Lactobacillus and other probiotic bacteria can modulate specific mechanisms against various diseases including cancers. Probiotics may have a beneficial effect on the toxicity of anticancer therapy including radiation and chemotherapy.

**Methods:** ISI Web of Knowledge, PubMed, Scopus and Google Scholar were searched for related studies using the related keywords Title-ABS-Key including (probiotic) AND ("lactic acid bacteria") AND (cancer) OR (chemotherapy) OR (radiotherapy).

**Results:** Based on studies, probiotics play a protective role against toxic side effects of anticancer treatment. The radiation and chemotherapy are associated with some toxicity including hematological toxicity, gastrointestinal toxicity, alopecia, organ toxicity, postoperative infectious complications, constitutional toxicity, mucositis and diarrhea in colorectal, cervical, uterine, head and neck cancer patients. The clinical and experimental findings indicted the mechanisms that related to probiotics such as apoptosis, antioxidant activity, immune response and epigenetics in cancer treatment. The related probiotic bacteria was included: Lactobacillus rhamnosus GG, L. acidophilus, L. brevis, Streptococcus thermophilus TH-4, Bifidobacterium breve, B. bifidum, L. rhamnosus and L. casei DN-114 001.

**Conclusion:** This study has shown that probiotics result in reduce of chemo/radiotherapy side effect for cancers. Base on clinical trial studies, it seems that probiotic bacteria could be safely administered. Altogether, by modulating intestinal microbiota and immune response, some strains of probiotics can be used as an adjuvant for cancer prevention or/and treatment.

**Keywords:** Probiotic, lactic acid bacteria, cancer, chemotherapy, radiotherapy

# P747 - 536: THE EFFECT OF BACILLUS SUBTILIS JQ16816 ON LIPID PANEL PARAMETERS AND MODULATION OF LIPID METABOLISM IN RATS WITH HIGH-FAT DIET

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**Background and Aim:** Cardiovascular diseases is one of the important risk factor of death in all of the world which high cholesterol level in blood is a major factor. There are several approaches to reduce cholelsterol level, including drug therapy, using healing herbs and consumption of probiotics. In present study, we evaluated the effect of bacillus subtilis JQ61816 strain on lipid profile and expression level of HMGCR and 7α-hydroxylase genes.

**Methods:** Twenty-one Wistar male rats divided in three groups: A) negative control with normal diet; B) positive control with high cholesterol diet; C) Trial group with high cholesterol diet plus probiotic suspension. In 21th day, the rats were anesthetized and blood sample and adiposis tissues were collected. Serum levels of lipids were assayed by an auto-analyzer. Total RNA were isolated from adiposis tissues and then cDNA synthesized and used as template in further steps. Finally, we used Real-time PCR to evaluate expression of Hmgcr and 7α-hydroxylase compared with GAPDH gene.

**Results:** Our finding indicated that bacillus subtilis JQ61816 strain can reduce cholesterol and triglyceride significantly. Also, no any reduction for serum levels of HDL and LDL were observed. analysis of gene expression show that HMGCR gene expression has increased in probiotic group while expression of 7?-hydroxylase gene has decreased significantly.

**Conclusion:** According to the results we suggest that administration of B. subtilis JQ16816 can reduce serum total cholesterol and it can be effective for reduction of cardiovascular diseases risk.

**Keywords:** Cardiovascular, probiotics, bacillus subtilis

# P748 - 553: INVESTIGATING THE EFFECT OF GALACTOOLIGOSACCHARIDE ADDITION AND SUGAR REPLACEMENT WITH HIGH FRUCTOSE CORN SYRUP ON PROBIOTIC APPLE JUICE

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**Background and Aim:** In recent years, the demand for probiotic products based on non-dairy products has been increased.

**Methods:** In this regard, the purpose of this study was to investigate the possibility of using apple juice as a carrier for encapsulated probiotic bacteria and evaluate the effect of galactooligosaccharide (GOS) at concentrations of 0.5, 1 and 2% on the survival rate of the encapsulated Lactobacillus acidophillus bacteria during 28 days in the juice.

**Results:** The results of analysis of variance showed that the effect of GOS on the survival rate of encapsulated Lactobacillus casei was significant during storage ($p<0.05$). Generally, the results indicated that the prebiotic compound (GOS) increased viability of probiotic bacteria compared to the control sample, and the most effective treatments for these compounds were level of 1%.The effect of these two compounds on the growth of Lactobacillus acidophillus bacteria in juice samples during 28 days showed that in control sample 1.8 logarithmic cycles but in treated samples less than one cycle (1>) reduction was performed in the number of Lactobacillus acidophillus during 4 weeks storage of juice in refrigerator.

**Conclusion:** The addition of prebiotic of GOS, during the microencapsulation of Lactobacillus acidophillus increase the resistance of probiotic bacteria to reduced pH and the presence of bile salts in the simulated gastro-intestinal conditions.

**Keywords:** galactooligosaccharide, Lactobacillus acidophillus, apple, probiotics

# P749 - 605: ANALYSIS OF LACTOBACILLUS ACIDOPHILUS EFFECT ON THE IMPROVEMENT PROCESS OF HELICOBACTER PYLORI INFECTION WITH INFLAMMATION AND GASTRIC ULCER IN ANIMAL MODEL BALB/C

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**Background and Aim:** Probiotics have an in vitro inhibitory effect on H. pylori. Animal studies demonstrated that probiotic treatment is effective in reducing H. pylori-associated gastric inflammation. About 12 human studies investigated the efficacy of combinations of antibiotics and probiotics, whereas 16 studies used probiotic alone as an alternative to antibiotics for the treatment of H. pylori infection.

**Methods:** The mice were randomly divided into four experimental groups (eight mouse each group) mice were inoculated with h.pylori suspension (5*1010cfus/ml) in PBS by gavage twice daily. One week after inoculation has been confirmation of inflammation. After confirmation of inflammation the animals were treated group with lactobacillus acidophilus and omeprazole. (106cfus/ml) suspended in PBS once daily for one week. After 6 week the improvement of inflammation in biopsy's sample of gastric was analyzed.

**Results:** H.pylori infection in mice was determined by the urease test and histopathology. Histopathology in the control group was normal, while in the H. pylori infected group there was moderate H.pylori colonization and inflammation. lactobacillus acidophilus 106 CFUs/mL treated groups showed reduced H. pylori colonization and significant improved stomach inflammation.

**Conclusion:** It is known that Lactobacillus secretes metabolic products such as lactic acid which exerts activity against H. pylori. Lactic acid inhibits the urease activity and viability of H. pylori. Several studies have reported that bacitracin, peroxide, proteinase, exopolysaccharide and cell wall components, called Lactobacillus-inhibitory factors, Have antibacterial effects several previous investigations have shown the anti-inflammatory properties of Lactobacillus.

**Keywords:** Helicobacteri pylori, lactobacillus acidophilus, UreB, gastric inflammation, Balb/c

# P750 - 606: ANALYSIS OF LACTOBACILLUS PLANTARUM EFFECT ON THE IMPROVEMENT PROCESS OF HELICOBACTERI PYLORI INFECTION WITH INFLAMMATION AND GASTRIC ULCER IN ANIMAL MODEL C57BL/6

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**Background and Aim:** Probiotics have an in vitro inhibitory effect on H. pylori. Animal studies demonstrated that probiotic treatment is effective in reducing H. pylori-associated gastric inflammation. About 12 human studies investigated the efficacy of combinations of antibiotics and probiotics, whereas 16 studies used probiotic alone as an alternative to antibiotics for the treatment of H. pylori infection.

**Methods:** The mice were randomly divided into four experimental groups (eight mouse each group) mice were inoculated with h.pylori suspension ($5*10^{10}$cfus/ml) in PBS by gavage twice daily. One week after inoculation has been confirmation of inflammation. After confirmation of inflammation the animals were treated group with lactobacillus plantarum and omeprazole. (106cfus/ml) suspended in PBS once daily for one week. After 6 week the improvement of inflammation in biopsy's sample of gastric was analyzed.

**Results:** H.pylori infection in mice was determined by the urease test and histopathology. Histopathology in the control group was normal, while in the H. pylori infected group there was moderate H.pylori colonization and inflammation. Lactobacillus plantarum 106 CFUs/mL treated groups showed reduced H. pylori colonization and significant improved stomach inflammation.

**Conclusion:** It is known that Lactobacillus secretes metabolic products such as lactic acid which exerts activity against H. pylori. Lactic acid inhibits the urease activity and viability of H. pylori. Several studies have reported that bacitracin, peroxide, proteinase, exopolysaccharide and cell wall components, called Lactobacillus-inhibitory factors, Have antibacterial effects several previous investigations have shown the anti-inflammatory properties of Lactobacillus.

**Keywords:** Helicobacteri pylori, lactobacillus plantarum, UreB, gastric inflammation, C57BL/6

# P751 - 641: ISOLATION AND IDENTIFICATION OF PROBIOTIC BACTERIA FROM FIG VINEGAR

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**Background and Aim:** Probiotics are microorganisms that can survive digestive acidic conditions, and with destroing harmful intestinal microorganisms and Balance the intestinal microbial flora, role in health maintenance and growth incease of human and livestock. Lactobacilli are the most important and abundant of these microorganisms. These bacteria are capable of growing in fermented food. Fig Vinegar in addition to many healing properties, it can be a product for the isolation of probiotic bacteria. The purpose of this study is to isolate Lactobacili bacteria from fig vinegar, and introducing this nutrient as a source for probiotic bacterial production.

**Methods:** Bacteria in vinegar samples were isolated, and some biochemical properties such as the presence of catalase and oxidase enzymes were examined. Their probiotic properties, including the ability to grow in acid and bile environment, were investigated.

**Results:** Of the 12 microorganisms, extracted from fig vinegar, five isolate were diagnosed as lactobacillus. These strains are Gram-positive and negative catalase and oxidase, and have great potential for growing and survival in the acid and bile environment. The molecular identification of the strains was accomplished by a 16srRNA-specific primer.

**Conclusion:** This study showed that Iranian fig vinegar could be a good source for isolating probiotic bacteria, including Lactobacilli.

**Keywords:** Extraction, Identification, Probiotic, Lactobacillus, Fig vinegar

# P752 - 643: ISOLATION AND IDENTIFICATION OF LACTOBACILLUS PROBIOTIC BACTERIA FROM MORUS ALBA VINEGAR AND THEIR RESISTANCE TO ANTIBIOTICS

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**Background and Aim:** Probiotics are living microorganisms, which in addition to their natural presence in digestive system, could be find in some foods, and are recommended for digestive problems. Probiotics can restore the balance of the intestinal microbial flora when the intestinal microbial flora is disrupted after usage of antibiotics or gastrointestinal diseases. Antibiotic resistance is an important property in their selection. Lactobacillus are the most common probiotic microorganisms.

**Methods:** In this study, the isolated microorganisms of Morus alba vinegar, were examined for Gram, catalase and oxidase. After confirmation of their probiotic properties by using acidic and bile salts medium, molecular identification was performed by specific primers. The comparetive resistance of Lactobacilli was studied by antibiotic disks, with measuring the diameter of the inhibition zone around the discs.

**Results:** Among microorganisms isolated from Morus alba vinegar, Gram positive, and negetiv catalase and oxidase bacilli, were selected for specific primers 16srRNA gene examination. These Lactobacilli had the ability to grow and survive in acid and biliary environments. Of the 17 antibiotics tested, bacteria were resistant to eight antibiotics and showed relative susceptibility to three antibiotics.

**Conclusion:** This study showed that Iranian Morus alba vinegar could be a good source for isolation of probiotic bacteria, including Lactobacilli. The isolated Lactobacilli showed a good resistance to a group of commonly used antibiotics.

**Keywords:** Identification, Probiotic, Lactobacillus, Berry vinegar, Antibiotic resistant

# P753 - 652: EFFECTS OF LACTOBACILLUS RHAMNOSUS (LIVE BACTERIA, SUPERNATANT AND CELL LYSIS) ON COLORECTAL TUMOR CELL VIABILITY

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**Background and Aim:** Scientists are looking at various signs of colon cancer development. Because colorectal cancer takings years to progress. This study offer the largest group of inhabitation bacteria in the colon, to prevent colorectal cancer. Lactobacilli rhamnosus are safe usage of healthy bowel microbacteria associated with genetics and environmental factors. They have decreased mast cell-derived mediators in immunomodulation, production of cytokines and intestinal inflammation.The other, beneficial effects of this probiotics are antiproliferative effects on colorectal cancer cell lines by involving in metastasis. The suppression metastasis of colon cancer cell lines by down-regulation of T-cell factor/β-catenin [4]. Lactobacilli rhamnosus is part of Lactic acid bacteria (LAB), so it has anti-microbial effect against of pathogenic bacteria and prevented cytokine-induced apoptosis in epithelial cells. Also, increased apoptosis and tumor necrosis factor (TNF) Probiotics effects on cell increase, migration and invasion were assessed.

**Methods:** The Caco-2 were grown in RPMI-1640 medium which was supplemented with 10% FBS and 1% penicillin/streptomycin. Briefly, 5×103 cells were plated into 96-well plates. Supernatants, live bacteria and bacterial extracts of L. rhamnosus were prepared and CaCo-2 cells were treated with them. Therefore, Formazan crystals in MTT Solution were dissolved by DMSO addition. Absorbance was then measured at 570 nm.

**Results:** The effect of 103 mg/ml live bacteria, 3µg/ml supernatant and 6 µg/ml lysis L. rhamnosus was more evident of increasing concentrations in Caco-2 by MTT test.

**Conclusion:** -

**Keywords:** Colorectal cancer, Lactic acid bacteria (LAB), Lactobacillus rhamnosus

# P754 - 672: A STUDY ON THE EFFECTS OF SOY EXTRACT ON THE GROWTH OF PROBIOTIC BACTERIA LACTOBACILLUS ACIDOPHILUS AND BIFIDOBACTERIUM BIFIDUM BACTERIA IN PROBIOTIC MILK AND YOGURT

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**Background and Aim:** To determine the effect of different amounts of soybean extract(0, 2, 4 and 6 percent) in order to increase the growth of probiotic bacterialactobacillus acidophilus and Bifidobacteriumbifidum, in the probiotic milk and yoghurt, in the first stage 0/33 grams of lipholisebacteria Lactobacillus acidophilus, were added to one liter of UHT low-fat milk and it was considered as an evidence, within three remaining containers in addition to the bacteria and milk, 2, 4 and 6 percent of the soy extract were used. Then, four containers were incubated at 38 ° C and after the acidity of the product reached to 40 ° durnyk, they were transferred to the refrigerator at 2 ° C

**Methods:** Culture.

**Results:** The rate of progression of acidity in yogurt Lactobacillus was faster but its shelf life was shorter. Lactobacillus yogurt was more sour and contained more water than Bifidus yogurt.

**Conclusion:** Soy extract had a positive impact on the growth rate of bacteria Lactobacillus acidophilus and Bifidobacterium bifidum and acidity of the products (milk and yogurt) rose with increasing concentrations of soybean.

**Keywords:** Probiotic, Lactobacillus acidophilus, Bifidobacterium bifidum, Soybean extract

# P755 - 677: EVALUATION ANTIMICROBIAL ACTIVITY OF LACTOBACILLUS SPICES AGAINST ACINETOBACTER BAUMANNI

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**Background and Aim:** Lactobacillus spp are a group of gram-positive, non-spore forming, cocci or rod shaped, catalase negative organisms that benefit to the host. Acinetobacter is a Cocoa Basil, Aerobic, Gram-negative has emerged as a significant opportunistic pathogen responsible for nosocomial infections. Treatment of infections due to this organism is becoming a serious clinical concern and this bacterium is frequently resistant to multiple classes of drugs. The aim of this study was to determine the antimicrobial effect of supernatant of Lactobacillus spp against Acinetobacter spp. Strain.

**Methods:** In this descriptive - analytical study, all microbial strains were collected from the collection of bacteria and fungi from the Institute of Industrial Researches of Iran as lyophilisation. Antimicrobial activity of bacterial culture supernatant probiotics Lactobacillus rhamnosus and ruteri was tested using Agar Well Diffusion (AWD) method.

**Results:** The results showed that the antibacterial metabolites produced by the lactobacillus had antimicrobial activity against Acinetobacter baumannii, which had the highest inhibitory effect on the synergistic effect of both lactobacillus inhibition zone 20.1 mm.

**Conclusion:** Considering the antagonistic effects of Lactobacillus against Acinetobacter Baumannii, it can be said that probiotic products, including lactobacilli and their metabolites of human origin, can be appropriately chosen for the prevention and treatment of infections.

**Keywords:** Lactobacillus spp, Acinetobacter Baumannii, Nosomical infection

# P756 - 718: TO STUDY THE EFFECT OF PROBIOTIC (BACILLUS SUBTILIS) ON THE SERUM MDA (MALONDIALDEHYDE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS.

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**Background and Aim:** To study the effect of probiotic(Bacillus subtilis)on the serum MDA(Malondialdehyde) change due to acetaminophen in male Wistar rats.

**Methods:** Materials and Methods: The rats were randomly divided into four groups: the first group was considered as the control group (receiving only saline by gavage). The second group were received probiotics (Bacillus subtilis) for four weeks, (every rat.1 g per day.)A single dose of 850 mg/kg (i.p) of the acetaminophen was given to third group. The fourth group were received probiotics (Bacillus subtilis) and acetaminophen similar to second and third group respectively.Blood samples were prepared from the rats and serum liver enzyme MDA were assessed by spectrophotometric method. Statistical analysis weredone by SPSS 24 with one way ANOVA and post hoc Tukey's test.

**Results**: Serum MDA level in groups 1 to 4 was 14.33, 28.99, 30.5, 22.65 respectively. Statistical difference between groups 3 &4 and 1 & 3 was significant ($P<0.05$). These results indicated that acetaminophen has been increased MDA level in compare to control group and probiotic(Bacillus subtilis) lowered this level again.

**Conclusion:** Probiotic(Bacillus subtilis) compensated increase of oxidative stress marker (MDA) due to acetaminophen toxicity.

**Keywords:** Bacillus subtilis, MDA, acetaminophen

# P757 - 720: TO STUDY THE EFFECT OF PROBIOTIC (BACILLUS SUBTILIS) ON THE SERUM TAC(TOTAL_ANTIOXIDANT CAPACITY) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS.

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**Background and Aim:** Introduction: To study the effect of probiotic on (Bacillus subtilis) the serum TAC(Total_antioxidant capacity) change due to acetaminophen in male Wistar rats.

**Methods:** Materials and Methods: The rats were randomly divided into four groups: the first group was considered as the control group (receiving only saline by gavage). The second group were received probiotics (Bacillus subtilis) for four weeks, (every rat.1 g per day.)A single dose of 850 mg/kg (i.p) of the acetaminophen was given to third group. The fourth group were received probiotics (Bacillus subtilis) and acetaminophen similar to second and third group respectively.Blood samples were prepared from the rats and serum liver enzyme TAC were assessed by spectrophotometric method. Statistical analysis weredone by SPSS 24 with one way ANOVA and post hoc Tukey's test.

**Results:** Serum TAC level in groups 1 to 4 was 0.62, 0.07, 5.56, 0.37 respectively. Statistical difference between groups 3 &4 and 1 & 3 was significant ($P<0.05$). These results indicated that acetaminophen has been increased TAC level in compare to control group and probiotic (Bacillus subtilis) lowered this level again.

**Conclusion:** Probiotic (Bacillus subtilis) compensated increase of oxidative stress marker (TAC) due to acetaminophen toxicity.

**Keywords:** Bacillus subtilis, TAC, acetaminophen

# P758 - 723: TO STUDY THE EFFECT OF PROBIOTIC (PROVITA) ON THE SERUM MDA(MALONDIALDEHYDE) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS.

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**Background and Aim:** To study the effect of probiotic on (Provita) the serum MDA(Malondialdehyde) change due to acetaminophen in male Wistar rats.

**Methods:** The rats were randomly divided into four groups: the first group was considered as the control group (receiving only saline by gavage). The second group were received probiotics (Provita) for four weeks, (every rat.1 g per day). A single dose of 850 mg/kg (i.p) of the acetaminophen was given to third group. The fourth group were received probiotics (Provita) and acetaminophen similar to second andthird group respectively.Blood samples were prepared from the rats and serum liver enzyme MDA were assessed by spectrophotometric method. Statistical analysis weredone by SPSS 24 with one way ANOVA and post hoc Tukey's test.

**Results:** Serum MDA level in groups 1 to 4 was 14.33, 18.53, 30.5, 21.14 respectively. Statistical difference between groups 3 &4 and 1 & 3 was significant ($P<0.05$). These results indicated that acetaminophen has been increased MDA level in compare to control group and probiotic(Provita) lowered this level again.

**Conclusion:** Probiotic (Provita) compensated increase of oxidative stress marker (MDA) due to acetaminophen toxicity.

**Keywords:** Provita, MDA, acetaminophen

# P759 - 724: TO STUDY THE EFFECT OF PROBIOTIC (PROVITA) ON THE SERUM TAC(TOTAL_ANTIOXIDANT CAPACITY) CHANGE DUE TO ACETAMINOPHEN IN MALE WISTAR RATS.

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**Background and Aim:** To study the effect of probiotic on (Provita) the serum TAC (Total_antioxidant capacity) change due to acetaminophen in male Wistar rats.

**Methods:** The rats were randomly divided into four groups: the first group was considered as the control group (receiving only saline by gavage). The second group were received probiotics (provita) for four weeks, (every rat.1 g per day.)A single dose of 850 mg/kg (i.p) of the acetaminophen was given to third group. The fourth group were received probiotics(Provita) and acetaminophen similar to second andthird group respectively.Blood samples were prepared from the rats and serum liver enzyme TAC were assessed by spectrophotometric method. Statistical analysis weredone by SPSS 24 with one way ANOVA and post hoc Tukey's test.

**Results:** Serum TAC level in groups 1 to 4 was 0.62, 0.05, 5.56, 0.16 respectively. Statistical difference between groups 3 &4 and 1 & 3 was significant ($P<0.05$). These results indicated that acetaminophen has been increased TAC level in compare to control group and probiotic (Provita) lowered this level again.

**Conclusion:** Probiotic (Provita) compensated increase of oxidative stress marker (TAC) due to acetaminophen toxicity.

**Keywords:** Provita, TAC, acetaminophen

# P760 - 789: EXTRACTION AND PURIFICATION OF EXTRACELLULAR VESICLES OF FAECALIBACTERIUM PRAUSNITZII

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**Background and Aim:** Faecalibacterium prausnitzii is considered as one of the most important members of gut microbiota. This bacteria is the major bacterial indicator of a healthy adults. F.prausnitzii abundance is reduced in different intestinal disorders such as inflammatory bowel disease, colitis,….. And like other bacteria, release nanosize particles that refer as extracellular vesicles (EVS). These vesicles are heterogeneous in size and composition and play roles in modulating immune response in host. Since F.prausnitzii have pivotal roles in gut microbiota thus we studied F.prausnitzii potential to EVS production for the first time.

**Methods:** We cultured F.prausnitzii standard strain A2-165 in BHI medium (Brain-heart infusion medium) in anaerobic condition. EVS were extracted using deoxycholate and EDTA, and purified by sequential centrifugation. Then we analyzed physicochemical properties of these EVS. The protein content was measured by nano-drop and protein profile was determined by SDS-PAGE. Electron microscopy was used to assess the EVS size and morphology.

**Results:** Our result showed that the F.prausnitzii produced spherical shape vesicles which had diameter range 50-200 nm. Also the amount of protein extracted was 0.5 mg/ml. SDS-PAGE revealed protein bands in the region of 10-250 kb.

**Conclusion:** In this study for the first time, we reported that F.prausnitzii can produce EVS . Since these bacteria significantly affect host metabolism, their EVS could be promising candidate in intestinal disorders treatment.

**Keywords:** Extracellular vesicles, Faecalibacterium prausnitzii, gut microbiota, intestinal disorders

# P761 - 794: INVESTIGATION OF ACID TOLERANCE PROPERTY OF LACTOBACILLUS ACIDOPHILUS (PTCC 1643) AS A POTENTIAL PROBIOTIC CANDIDATE

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**Background and Aim:** Lactobacillus acidophilus is Gram-positive and classified as the lactic acid bacteria. Lactobacillus species are widely recognized to have probiotic effects. One of the most important properties of Lactobacillus bacteria for their probiotic potential is tolerance to low ph. In this study, acid tolerance test carried out under various pH for commercial Lactobacillus acidophilus (PTCC 1643) as a probiotic candidate.

**Methods:** The selected strain of Lactobacillus acidophilus (PTCC 1643) was assessed for tolerance to low pH levels. Thus cell suspentions were 10-fold diluted with MRS medium, adjusted to ph 2.5, 4 and 7 (as control) with HCl and incubated at 37 oC for 3 and 4 hours. Then plating of diluted suspantions in various pH was performed on MRS agar and incubated anaerobically at 37oC for 48 hours. The growth of living cells on MRS agar and colony count of bacteria represent the amount of acid tolerance.

**Results:**this study demonstrated the survival of Lactobacillus acidophilus (PTCC 1643) at pH 2.5 and 4 compared to pH 7 after 3h and 4h incubation periods was very considerable.

**Conclusion:** The Lactobacillus acidophilus (PTCC 1643) in terms of acid tolerance can be considered as a potential probiotic.

**Keywords:** Lactobacillus acidophilus, probiotic, acid tolerance

# P762 - 854: OPTIMIZATION OF CULTURE CONDITIONS FOR INCREASING THE BIOMASS OF PROBIOTIC STRAIN LACTOBACILLUS ACIDOPHILUS BY EXPERIMENTAL DESIGN

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**Background and Aim:** Probiotic strains have some clear benefits such as prevention of toxins activities, stimulation of immune responses, improving microbial balance and stimulation of digestive enzymes activities as well. The purpose of this investigation was to evaluate the effect of cultural variables affecting the growth of probiotic strain Lactobacillus acidophilus ATCC 700396 which is well-known strain in many probiotic productions.

**Methods:** For screening the most effective variables and finding their minimal and maximal levels, one variable at the time method was used. Response surface methodology was employed to optimize media components via statistical models. By using Box-Behnken plan, 17 trials consist of 12 factorial trials and 5 central experiments were accomplished. Then, the best mathematical model was selected for assessment of data and finding optimal points.

**Results:** Among the variables consist of glucose, lactose, galactose, fructose, sucrose, sodium pyruvate, sodium acetate, ammonium citrate, meat extract and yeast extract, three factors including glucose concentration, meat extract and sodium acetate were more effective components in increasing the bacterial biomass. By solving the model equation, the optimal levels were obtained at glucose concentration of 15.6 (g/L), meat extract concentration of 8.45 (g/L) and sodium acetate of 5.72 (g/L). The maximal dry cell weight of L. acidophilus was 0.76 (g/L).

**Conclusion:** Biomass concentration of L. acidophilus cultivated in optimized medium was higher in comparison with bacterial growth in MRS medium under the same conditions which makes it economical.

**Keywords:** Optimization, Lactobacillus acidophilus, Response surface methodology

# P763 - 874: INVESTIGATING THE EFFECTS OF FOODS ENRICHED BY PROBIOTICS ON GLUCOSE, LIPID PROFILE AND INFLAMMATORY BIOMARKERS IN DIABETIC PATIENTS (A REVIEW OF HUMAN STUDIES)

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**Background and Aim:** Probiotics are a group of microorganisms leading health improvement if they exist abundantly in the host's gut. Studies suggested that micro-flora composition in human are different which may be a basis for variety of pathogenic/health mechanisms. We conducted this study to investigate the effect of micro-flora in form of enriched foods on glucose, lipid and inflammatory biomarkers in diabetic subjects.

**Methods:** This study was conducted to determine the effect of foods enriched by probiotics on glucose, lipid and inflammatory profile in diabetic patients, and was written by investigating scientific sources and papers in authentic journals and databases like scholar.google.com, pubmed.com, sciencedirect.com and Iranian website including sid.ir. 20 papers published between 2010 and 2016 were gathered and reviewed.

**Results:** In surveyed studies, the effect of probiotics in form of enriched foods against placebo in diabetic patients was evaluated that indicated the significant reduction in total cholesterol and LDL-c in subjects who consumed probiotic enriched foods. In most studies, the serum HDL-c, TG, glucose and insulin did not show the significant differences compared with the control group, however when it introduced with low-calorie diet resulted in significant decrease in all components of lipid profile and glucose compared with control group. Nevertheless, inflammatory biomarkers like hs-CRP and TNF- α indicated no significant changes.

**Conclusion:** According to the obtained results, enriching foods such as dairy products with probiotics leads to significant decrement in LDL-c and total cholesterol. It has been suggested that further studies on effectiveness of food enriching by probiotics conduct in combination with prebiotics/low-calorie diet.

**Keywords:** Probiotic, Lipid Profile, Inflammatory Biomarkers, Enrichment

# P764 - 883: PROBIOTICS ROLES IN COLON CANCER PREVENTION

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**Background and Aim:** Colon cancer is the most important cancer around the world and the colonic microflora and Diet makes an important contribution to cancer. This has led to intense interest in factors such as probiotics that can modulate gut microflora and its metabolism.

**Methods:** In review article were collected by searching in informative bank such as www.isi web of knowledge.com, www.Scincedirect.com and www.scopus.com between 1995 to 2012.The keywords probiotics, Neoplasms (Cancer), Lactobacillus and Bifidobacreium were used for searching.

**Results:** The strongest evidence for the anticancer effects of probiotics comes from animal studies, and evidence from human studies (epidemiology and experimental) is still limited. There are several possible mechanisms that might explain how probiotic bacteria might protect against tumor development in the colon. However, questions such as what is the major contributing mechanism for a particular bacterial strain, or how are the different mechanisms linked are questions to which we currently do not have the answers. It is possible that different strains target different mechanisms. All of the mechanisms have various degrees of support, mainly originating from in vitro and animal experiments, and some of them even have some support from human clinical studies.

**Conclusion:** More research needs to be done to identify the specific strains and strain characteristics responsible for specific antitumor effects and the mechanisms by which these effects are mediated. More clinical trials are needed to better understand the exact underlying mechanisms, and to strengthen the suggestions that probiotics could play a major role in preventing colonic cancers.

**Keywords:** Probiotics, Neoplasms, Prevention, Colorectal

# P765 - 917: ISOLATION OF PROBIOTIC LACTOBACILLUS WITH ANTIMICROBIAL ACTIVITY FROM MILK SAMPLE

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**Background and Aim:** The intestinal microbiota, probiotics, play an important role in antimicrobial properties. In this study, the antimicrobial activity of lactic acid bacteria isolated from milk samples were investigated.

**Methods:** Samples of milk were collected from three regions of Tehran, Arak and Mazandaran. The samples were cultured separately in a serial dilution of MRS Broth and MRS medium, followed by purification with streak culture on selective media. For Elimination of Repetitive Strains, the isolates were studied using morphological characteristics and biochemical such as Gram staining, colony morphology, motility test, growth at 15-45 ° C, and pH = 6.9, nitrate reduction, MRVP test, Simmons citrate and Gelatin hydrolysis test. Finally, the antibacterial effect of the candidate strains were evaluated using supernatant against Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Shigella dysenteriae and Klebsiella pneumoniae by agar diffusion method.

**Results:** A total of 50 colonies were isolated based on the biochemical and microscopic characteristics that the Twenty-one (42%) identified as Lactobacillus (sp); L. casei and L. delbrueckii. Five strains showed antibacterial activity against Escherichia coli, Staphylococcus aureus and Pseudomonas aeruginosa. In addition, the 5 isolates were able to grow at pH = 4 and in the presence of bile salts.

**Conclusion:** Having the potential for the production of an antibacterial substance by the strains, they can be used in the food industry.

**Keywords:** Lactobacillus(sp), probiotic, antimicrobial properties

# P766 - 941: EFFECT OF PROPHYT (PROBIOTIC BACTERIA AND HERBAL EXTRACTS) ON THE GROWTH OF PATHOGENIC BACTERIA

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**Background and Aim:** In last decade, probiotic bacteria and phytobiotics have been the focus of attention of many researchers and consumers as safe alternatives to antibiotics in man and animals.

**Methods:** Three probiotic bacterial strains namely Enterococcus faecium, Pediococcus acidilactici, and Lactobacillus plantarum isolated previously from traditional dairy products and poultry and herbal extracts including peppermint, thyme and chamomile were selected for studies. Initially, the antibacterial effect of the mentioned probiotic bacteria and the herbal extracts against Escherichia coli, Salmonella typhimurium and Enterococcus faecalis was determined by agar well diffusion assay. The MIC of herbal extracts against the mentioned pathogens was determined by serial dilution assay. The viability of the bacteria (cfu/ml) in the presence of different concentrations of herbal extracts was determined. The synergistic effect of the combination of probiotic bacteria and the herbal extracts named as Prophyt against the pathogens was determined and their AU/ml recorded.

**Results:** The mentioned probiotic bacteria and the herbal extracts had significant antibacterial activity against the pathogens. The mentioned bacteria were able to endure different concentrations of the herbal extracts and only a 1Log cfu/ml reduction was seen at the highest used concentrations of peppermint. Thyme and Peppermint in combination with P.acidilactici and L.plantarum showed the highest AU/ml against the tested pathogens respectively.

**Conclusion:** Probiotic bacteria and herbal extracts might be suitable replacement for antibiotics in man and animals.

**Keywords:** Probiotic, Phytobiotics, Prophyt, antibacterial activity, MIC

# P767 - 942: PHENOTYPIC AND GENOTYPIC CHARACTERISTICS OF PROBIOTIC BACTERIA ISOLATED FROM GASTROINTESTINAL TRACT OF POULTRY

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**Background and Aim:** The food industry plays a critical role in facilitating healthier eating practices through the delivery and promotion of healthy foods. In recent years, the development of dietary supplements that can affect the intestinal microbial composition has been emphasized globally.

**Methods:** In this study we isolated a number of gram positive and hemolyze negative bacterial isolates from different GI parts of poultry. The isolates were identified to genus level by API kit and 16SrRNA sequencing. The identified bacteria were characterized for their probiotic properties including, resistance to acid and bile, viability in simulated intestinal and gastric conditions, antibacterial activity, aggregation, co-aggregation, hydrophobicity, adhesion to Caco2 Cell lines, antibiotic sensitivity pattern and cholesterol reducing ability. Bacillus strains were tested for their virulence genes by molecular techniques.

**Results:** Sixteen gram positive isolates showing no hemolysis on blood agar were identified as belonging to Genus Lactobacillus, Pediococcus, Enterococcus and Bacillus group. Among these isolates 10 isolates showed significant probiotic properties including resistance to acidic and alkaline conditions and good growth in 1% bile concentrations. Significant differences were recorded in antibiotic sensitivity pattern, adhesion assays and cholesterol lowering properties of the isolates. Lactobacillus plantarum, L.rhamnosus, Enterococcus faecium and Bacillus subtilis were the significant probiotic strains showing enhanced cholesterol lowering effect in invitro conditions.

**Conclusion:** The isolated probiotic bacteria isolated in this study possess suitable properties for future use as food supplements.

**Keywords:** Probiotics, Poultry, adhesion assay, antibiotic sensitivity, cholesterol lowering

# P768 - 951: THE STUDY OF EXTRACELLULAR VESICLES DERIVED LACTOBACILLUS CASEI AS NEW GENERATION OF PROBIOTIC CANDIDATE

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**Background and Aim:** Gut microbiota is complex community of microorganisms which colonize the gastrointestinal tract. Lactobacillus casei is used as an industrial probiotic. Recently, the probiotic administration is controversial in leaky gut syndrome while extracellular vesicles (EVs) of commensal bacteria maintain beneficial effects in this condition. EVs are nano size particles that have significant roles in gut microbiota-host interactions. According to the importance of EVs in gut microbiota, we studied L. casei derived EVs as next generation probiotic candidates for the first time.

**Methods:** L.casei standard strain ATCC 393 was cultured in MRS medium. EVs of L.casei were isolated and purified by using differential centrifugation with sodium deoxycholate and EDTA.The protein content of EV were measured by Bradford protein assay and protein profile was determined by SDS-PAGE. Scanning electron microscopy (SEM) was performed to determination of EVs size and morphology.

**Results:** Our result revealed that L. casei produce EVs that had specific physicochemical properties. The content of extracted protein was 0.7 mg/ml. also protein bands of EVs were identified in the range of 10 up to 300 KD by SDS-PAGE. The electron microscopy showed spherical vesicles that had an average diameter between 150- 300nm.

**Conclusion:** L. casei is a member of gut microbiota that affect host metabolism. Like other members of gut microbiota, this bacterium communicates with host through various mechanisms including EVs production. We propose EVs could be considered as next generation probiotic candidate for modulation of gut microbiota – host interactions after further evaluation.

**Keywords:** Lactobacillus casei, Extracellular vecicle, gut microbiota

# P769 - 963: BACTERIOCINS FROM LACTIC ACID BACTERIA: PRODUCTION, PURIFICATION, AND FOOD APPLICATIONS

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**Background and Aim:** In fermented foods, lactic acid bacteria (LAB) display numerous antimicrobial activities. This is mainly due to the production of organic acids, but also of other compounds, such as bacteriocins and antifungal peptides. Several bacteriocins with industrial potential have been purified and characterized. The kinetics of bacteriocin production by LAB in relation to process factors have been studied in detail through mathematical modeling and positive predictive microbiology. Application of bacteriocin-producing starter cultures in sourdough (to increase competitiveness), in fermented sausage (anti-listerial effect), and in cheese (anti-listerial and anti-clostridial effects), have been studied during in vitro laboratory fermentations as well as on pilot-scale level. The highly promising results of these studies underline the important role that functional, bacteriocinogenic LAB strains may play in the food industry as starter cultures, co-cultures, or bioprotective cultures, to improve food quality and safety. In addition, antimicrobial production by probiotic LAB might play a role during in vivo interactions occurring in the human gastrointestinal tract, hence contributing to gut health. Cover a very broad field of application, including both the food industry and the medical sector. Concerning their use in food, bacteriocin-producing starter or co-cultures have been successfully applied in pilot-scale experiments (cheese, fermented sausage, sourdough, etc.), yielding food quality and food safety advantages. The current bottleneck hampering widespread industrial practice seems to be market implementation rather than scientific evidence or proof-of-concept. With respect to medical applications, antimicrobials produced by probiotic LAB might play a role during in vivo interactions occurring in the human gastrointestinal tract, hence contributing to gut health. Further research is needed to unravel the precise role of LAB bacteriocins in this process.

**Keywords:** Bacteriocins Bacteriocins, food application Bacteriocins, production Bacteriocins, purification Lactic acid bacteria Lactic acid bacteria, antimicrobial potential

# P770 - 996: THE EFFECT OF SACCHAROMYCES CEREVISIAE EXTRACTS OF LOCAL ISOLATE AGAINST ELASTOLYTIC ACTIVITY OF PSEUDOMONAS AERUGINOSA (PAO1) STRAIN.

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**Background and Aim:** Probiotics is"live microorganisms which when administered in sufficient amounts award a health advantages on the host. Saccharomyces cerevisiae is the first non-pathogenic yeasts as a probiotics for human that the helpful effects for humankind has been proved.Pseudomonas aeruginosa is one of the most significant opportunistic pathogen in immunocompromised individuals as well as in nosocomial infection. Pseudomonas aeruginosa has notably resistance to many antimicrobial agent ,thus; using an alternative treatment for this bacteria is more important than ever.Elastase enzyme can be destroied a wide range of host proteins,such as;elastin-collagen-Proteoglycan,… .Destruction of elastin by this enzyme is a major cause of Pathogenicity in acute infections.

**Methods:** To test the in-vitro activity of Saccharomyces cerevisiae (Supernatant-lysate) we were using Elastin Congo Red (ECR) as a substrate. The elastolytic activity were determined after incubation with Supernatant-lysate of Saccharomyces cerevisiae,separately, in 370C. Insoluble ECR was eliminated by centrifugation. Absorbance of the each culture's supernatants were measured at 495 nm.

**Results:** Both of Saccharomyces cerevisiae extracts (Supernatant-lysate) can be reduced elastolytic activity of Pseudomonas aeruginosa (PAO1).

**Conclusion:** The results of this study indicated that S.cerevisiae extracts has inhibitory effect against elastase enzyme of Pseudomonas aeruginosa, that by more research it can be promissing way for Reducing pathogenicity of (PAO1).

**Keywords:** PAO1-Saccharomyces cerevisiae, Elastase, Elastin Congo Red, Probiotic

# P771 - 997: THE INHIBITORY EFFECT OF SACCHAROMYCES CEREVISIAE EXTRACTS OF LOCAL ISOLATE AGAINST MOTILITY OF STANDARD STRAIN OF PSEUDOMONAS AERUGINOSA (PAO1)

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**Background and Aim:** Probiotics are defined as live micro-organisms that when administered in adequate amounts confer a health benefit to the host. Saccharomyces cerevisiae, a non-pathogenic yeast which use as probiotic, many mechanisms of action have been proposed to explain S.cerevisiae protection and modulates the immune system.Secondary metabolites in this yeast has antibacterial effect. Pseudomonas aeruginosa is a Gram-negative opportunistic pathogen that infects particulary immunocompromised individual.Pathogenicity of P. aeruginosa rely on innate Resistance to many antimicrobial agents and production of numerous virulence factors. The movement plays a significant role in bacteria colonization in different surfaces.Motility is the most important cause of biofilm formation.Monitoring of motility in this bacteria can be a major factor to reduce infection and pathogenicity.

**Methods:** To evaluate the effect of Saccharomyces cerevisiae extracts against Pseudomonas aeruginosa motility,we used 24h culture of Pseudomonas aeruginosa and inoculation to mediums. Each medium contained an extracts (extract of Supernatant and lysate). After incubation 16h in 370C , Clear zones around the colonies were measured.

**Results:** Both of Saccharomyces cerevisiae extracts (extracts of Supernatant and lysate) can be reduced motility of Pseudomonas aeruginosa (PAO1).

**Conclusion:** The results iillustrated that S.cerevisiae supernatant and lysate have inhibitory effect against PAO1 motility, that by more study can suggest as a way to control PAO1 infections.

**Keywords:** PAO1, Saccharomyces cerevisiae, Motility, probiotic

# P772 - 1045: APPLICATION OF PCR-BASED METHODS FOR CHARACTERISATION OF BACTERIOCIN-PRODUCING LAB ISOLATED FROM IRANIAN DAIRY PRODUCTS.

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**Background and Aim:** One of the main beneficial properties of LAB in food fermentation is production antimicrobial compounds and prevent or inhibit the growth of food spoilage bacteria. These antimicrobial compounds provide safety of fermented food and prolong shelflife. The antimicrobial compounds are lactic acid, hydrogen peroxide, diacetyl and bacteriocins.

**Methods:** The identification of strains performed by 16S rDNA sequencing. PCR amplification of bacteriocin genes performed using primers coding different types of LAB bacteriocins.148 LAB isolates screened for the presence of antimicrobial activity,10 positive isolates were obtained. Two of active isolates selected. 16S rDNA fraqment sequencing resulted in identification of Lactobacillus sakei,Enterococcus faecalis.

**Results:** Antimicrobial activity of the studied strains was mainly directed against Listeria monocytogenes and against closely related LAB. No inhibition of tested Gram-negative bacteria or yeasts was observed. The antimicrobial agents produced by both of the strains were heat stable and active pH (3–10). Activity was completely eliminated after treatment with proteinase K and α-chymotrypsin, and didnot decrease in the presence of catalase, which excluded inhibition by hydrogen peroxide. Effect of different chemicals on bacteriocin activities in cell-free supernatants didn't influence antimicrobial activity. PCR resulted in detection of two bacteriocin genes of E. faecalis strain: entB and entA. another strain Lactobacillus sakei, PCR amplification resulted in detection of sakacin P structural gene.

**Conclusion:** The studied strains are producers of bacteriocins with strong anti-Listerial activity. Due to this property, they could be used as natural bioconservants in food industry.

**Keywords:** Antilisterial, lactic acid bacteria, PCR, E. faecalis, Lactobacillus sakei

# P773 - 1058: STUDY OF PROBIOTICAL EFFECT OF CLINICAL ISOLATES SPORE OF THE BACILLUS GENUS ON CELL LINE HT29/219

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**Background and Aim:** Probiotics are bacteria through the intestinal microbial balance do have a beneficial impact on human health. The survey found the use of probiotics is effective in reducing the risk of cancer. The aim of this study was to investigate the effect of probiotic Bacillus clinical spore on colon cancer cell line Ht29 / 219.

**Methods:** Bacteria isolated using standard microbiological tests include Gram stain Haykatalaz, SIM, reduction of nitrate and spores coloring were detected. Following the genus Bacillus, Bacillus genus by PCR with specific primers was identified and molecular confirmed. At the end of a strain of Bacillus spores 2 N-14 and higher probiotic Bacillus lichenforimsB-S that feature on cell lines Ht29 / 219 were granted.

**Results:** In this study, four isolates were obtained from fecal samples. These isolates with standard microbiological methods were identified. 2 isolates were more resistant to acid and bile salt to the direction Andhra final approval, PCR reactions were performed with Bacillus genus-specific primers. Results inhibitory effect of different concentrations of spores of these strains on the cell line Ht29 / 219 indicated that the isolated Bacillus strain B-S lichenforims 72 hours at a concentration of 108 is the highest inhibitory effect.

**Conclusion:** Based on these results, it is suggested that probiotics could Aspvrjdayh Bacillus probiotics dietary supplements in the production or manufacture of biological products used in the treatment of colon cancer

**Keywords:** spores, a probiotic, Bacillus, Ht29 / 219

# P774 - 1059: THE EFFECT OF PROBIOTIC"LACTOBACILLUS PLANTARUM" ON ALCOHOLIC LIVER DISEASE IN RATS

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**Background and Aim:** One of the main reasons of Liver damage is chronic use of alcohol in Industrial societies which results in a wide range of Liver diseases. Therefore; we have assessed the probiotic effect of Lactobacillus Plantarum on Liver diseases caused by consumption of alcohol.

**Methods:** In this research,35 vistar rats with a weight about 170-200 gr, divided randomly into five groups of seven-member including normal control, alcoholic control, and three cure groups with probiotic Lactobacillus Plantarum. The normal control group only received food and water and the other groups received ethanol and distilled water with (1-3) ratios with intraperitoneal injections for a period of ten days. Then for a period of 28 days three probiotic cure groups with doses of 106 , 107 , 108 (cfu/ml) received by gavage. At the end of expriment the blood was taken out from the heart and the serum level of Liver enzymes including ALP,AST ,ALT were assessed using kit for each enzyme.

**Results:** The results of this study showed a significant decrease ( $p \leq 0.05$) in the serum level of AST, ALP and ALT enzymes at the doses of 106 and 107 (cfu/ml ) compared to the control group.

**Conclusion:** This research demonstrated that Lactobacillus Plantarum decreases Liver damage in vivo which is caused by alcohol ,Therefore we conclude that this probiotic is effective in improving alcoholic Liver disease.

**Keywords:** Probiotic, Liver, alcoholic disease, Rat, Enzymes

# P775 - 1060: THE EFFECT OF PROBIOTIC LEUCONOSTOC MESENTROEDS ON ENZYMES' ACTIVITY IN RATS' INTESTINES

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**Background and Aim:** In this study, the probiotic effect of leuconostoc mesentroeds on the activity of α-Amilaze and ALP enzymes in the intestinal will be studis Such probiotics have not been used so far to enhance the activity of these enzymes.

**Methods:** In this research, 32 vistar race rats that had passed the infancy period, were divided randomly into 4 groups of 8 members including normal control, and three cure groups by probiotic leuconostoc mesentroeds. Then for a period of 30 days, the cure groups received daily gavages with doses of 106 , 107 and 108(cfu/ml) and The normal group only received food and water.

**Results:** After the period was finished, specimens were taken from the mucus membrane in small intestines of the rats. The activity level of α Amilaze and ALP were assessesd using kit. The results of this study reveal that the activity of α Amilaze enzyme at the 10 8 dosage has noticeably increased compared to that of the negative control group, in the entire intestine. Comparably, the activity of this enzyme at 10 6 dosage shows similar increase but only in the ileum section. At 10 7 dosage, the activity of ALP enzyme increased in deuodenom, jejunum and eleoum sections in comparison to negative control group, while at 10 8 the increase took place in deudenom and at 10 6 in the ileum section.

**Conclusion:** In Conclusion that probiotic increases the activity of α Amilaze through hydrolysis of starch hydrocarbon.

**Keywords:** Probiotic, Enzyme, Intestine, Rat

# P776 - 1061: PHENOTYPIC AND GENOTYPIC INVESTIGATION OF LACTOBACILLUS SPP. ISOLATED FROM BREAST MILK

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**Background and Aim:** However, it had been presumed to be germ-free, human milk now believed to contain many bacteria including (LAB) which are non-pathogenic, anaerobic, gram positive bacteria, which are members of the commensal microorganisms. Some of these LABs shows the probiotic potential that may play a significant role in infant's health. One of the most important genera of probiotic bacteria found in milk is Lactobacillus. The aim of the present study was to further analysis of Lactobacilli present in human milk.

**Methods:** 60 milk samples were collected and cultured on MRS agar. The identity of isolates was further inspected using Gram staining and PCR reaction. The potential probiotic capacity was analyzed by the ability of the strains to withstand bile salt and acidic condition. Moreover, pathogen antagonistic effect of the isolates was assessed using agar spot test on seven prominent bacterial pathogens. To determine the nature of the pathogen killing mechanism of the isolated Cell free suspension was subjected to proteolytic enzymes, catalase enzyme and Neutralizing by NaOH.

**Results:** 927 bacterial colonies isolated from milk samples. 33 Out of 203 randomly-picked colonies were immune to acidic condition and Bile salt.18 of these isolates were proved to Lactobacillus genus. Most of the isolated Lactobacilli were able to prevent the growth of pathogens. A major percentage of these isolated prevented the growth of the pathogen by producing organic acid and H2O2.

**Conclusion:** Consequently, these study suggests that human milk contains potential probiotic which may play a major role in infant's health.

**Keywords:** Human milk, Probiotic, Lactobacillus, Bacteriocin

# P777 - 1064: THE EFFECT OF BIFIDOBACTERIUM BIFIDUM ON ALCOHOLIC LIVER DISEASE IN RATS

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**Background and Aim:** Alcoholic liver disease (ALD) is a major health problem worldwide. Despite advances in modern medicine, there is no effective drug available that stimulates liver function so, in this research probiotic Bifidobacterium bifidum is used as a replacement of chemical drugs in order to cure the ALD.

**Methods:** Thirty five rats with the vistar race those weight about 170-200 gr divided randomly in six groups of seven members ( normal control, alcoholic control, three groups of cares with concentration 106 _ 107 _108 cfu/ml ). These all groups except the normal control groups two times a day in 10 days were received a watery ethanol with the distilled water in range of (1-3) with intraperitoneal injection and curing groups with Bifidobacterium bifidum was received the mentioned concentration with gavage in 28 days. Finally after 48 hours of the last cure blood was taken from all rats' hearts to investigate the range of the liver enzymes AST-ALT-ALP.

**Results:** Therefore we conclude that probiotic Bifidobacterium bifidum is effect in improving alcoholic liver disease.

**Conclusion:** This research was shown that the average of serum enzyme level with the effect of curing with Bifidobacterium bifidum in the concentration 108 cfu/ml has the most decrease ($P<0.05$) in comparison with the alcoholic control group and we can obtain an obvious changes in the extract of 106 _ 107 cfu/ml with different amounts. This suggests that probiotic therapy played a causal role in the improvement in liver enzymes.

**Keywords:** Bifidobacterium bifidum, probiotics, alcoholic liver disease

# P778 - 1070: OPTIMIZATION OF SONICATION PROTOCOL ON THE WAY OF PROBIOTICS LYSATE PREPARATION

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**Background and Aim:** Choosing the most appropriate cell lysis protocol can dramatically affect the final fate of most of the microbial procedure. Using of lysis buffers with different recipes, Bead mills, French press and sonication are the most widely used mechanical and chemical methods for bacterial cell lysis. Although, there are many sonication protocols reported for bacterial cell lysis preparation, there is still no approved method of sonication for probiotics.

**Methods:** To achieve the best sonication optimization of probiotics including Lactobacillus casei and Lactobacillus rhamnosus, the variations of bacterial cell concentration, the buffer volume in which cell pellets resuspended and duration, interval, type of sonication instrument, type of probe and the power of sonication have been examined.

**Results:** Optimization using two sonication instruments has revealed that probiotics lysis with Ultrasonic Bath upon different variations has been failed to be perfectly done. Cell lysis using Ultrasonic Processor was successful when the optimization included 40 minutes sonication upon 60% power of sonication.

**Conclusion:** Present optimization has demonstrated that Ultrasonic Bath may not be a suitable option for cell lysis preparation of probiotics and suggested protocol based on using Ultrasonic Processor may be the easiest and cheapest way of having probiotic lysate for various research or medical applications.

**Keywords:** Probiotics, lysate, sonication, protocol

# P779 - 1073: PROBIOTICS

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**Background and Aim:** Probiotics are alive microorganisms to which are the family of bacteria producing Lactic acid and Lactobacillus species and Bifidobactery due to they live in gastrointestinal tract and don't have inflammation, they have useful effects on health. Intestinal microbial flora with the help of probiotics, increases the intake of food and protection against diseases and modifying treatment during disease course. These include dairy and non-dairy products and producing complex compounds such as antibiotics and vitamins. The main purpose of using probiotic compound is, stopping the proliferation pathogens in the intestine and maintaining the balance of the intestine natural microbial flora and protect of host.

**Methods:** This study is from 25 articles that is based on research by scientists from 2003 to 2017.

**Results:** Probiotics aren't only effective in treating digestive diseases, diarrhea, cancer, allergies, lactose, urinary tract infections, women's disease but, also in reducing egg yolk cholesterol. Recently, probiotics use in medicinal industrial for treating skin infection and beauty also by discovering engineering techniques, it reduced depression.

**Conclusion:** Nowadays, probiotics are known as a great business and they are also effective in reducing costs, treatment and nutrition however, the research continues about selecting the various probiotic species and type of impact they have on pathogens.

**Keywords:** Probiotic bacteria, Digestive diseases, Food

# P780 - 1091: IN-VITRO EVALUATION OF ANTIMICROBIAL ACTIVITY OF 9 PROBIOTIC STRAINS OF BIO-RUMINA NATIVE PROBIOTIC SUPPLEMENT AGAINST GRAM-NEGATIVE PATHOGENS OF CALF STOOL

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**Background and Aim:** The desire to use of probiotics with the effect on animal performance and health has increased as a replacement of growth-promoting antibiotics in animal feed industry. Probiotic bacteria have antimicrobial effects against intestinal pathogenic bacteria. These bacteria play their role through the production of organic acids, hydrogen peroxide, bacteriosins and preventing the binding of pathogenic bacteria to the intestinal mucosa.

**Methods:** In this study, gram negative pathogens were isolated from diarrheal calf stool. From the 9 strains probiotic of Bio-Rumina native probiotic supplement, a fresh culture on agar medium was prepared. Disk diffusion method was used to evaluate the antimicrobial effect.

**Results:** The results showed that each of 9 probiotic strains had antimicrobial effects against gram-negative pathogens of calf stool so that the maximum antimicrobial effect of probiotic strain was related to Bacillus subtilis against Escherichia coli which zone diameter around it was 17.5 millimeters and the minimum antimicrobial activity related to Saccharomyces cerevisiae.

**Conclusion:** According to the results, the use of probiotics as a natural biopreservative to maintain health and prevent diarrhea and digestive diseases in calves is suggested.

**Keywords:** Probiotic, Antimicrobial, Bacillus subtilis, Disk diffusion

# P781 - 1094: THE EFFECT OF PROBIOTIC SACCHAROMYCES CEREVISIAE ON PRODUCTION OF BIOFILM IN PSEUDOMONAS AERUGINOSA (PAO1):

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**Background and Aim:** According to the internationally agreed definition, probiotics are living microorganisms and, when administered in sufficient quantities, are in the interest of host health. Yeasts, in particular the genus Saccharomyces, are widely used as probiotics for humans and animals. Pseudomonas aeruginosa is a gram negative bacterium, has multiple virulence factors and a wide range of host populations, and is an opportunistic pathogen for humans, as well as significant potential for resistance to antibiotics.Biofilms are a collection of microbial cells enclosed in an extracellular polyester matrix. Today, biofilms are recognized as an important issue in human disease management.

**Methods:** To evaluate the effect of probiotic Saccharomyces cerevisiae on Pseudomonas aerosinosis biofilm, supernatant and lysates of this yeast were used in 24-hour culture of this bacterium. Finally, we measured this effect, by phenotypic colorimetric method.

**Results:** Saccharomyces cerevisiae lysate significantly reduced the production of biofilms in Pseudomonas aeruginosa, but the supernatant is not.

**Conclusion:** The results illustrated that S. cerevisiae lysate has inhibitory effect aganist PAO1 biofilm that by more study can suggest as a way to control PAO1 infections.

**Keywords:** Pseudomonas aeruginosa PAO1, Saccharomyces cerevisiae, Biofilm

# P782 - 1095: THE EFFECT OF PROBIOTIC SACCHAROMYCES CEREVISIAE ON PRODUCTION OF ALGINATE IN PSEUDOMONAS AERUGINOSA (8821M):

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**Background and Aim:** According to the internationally agreed definition, probiotics are living microorganisms and, when administered in sufficient quantities, are in the interest of host health. Yeasts, in particular the genus Saccharomyces, are widely used as probiotics for humans and animals. Pseudomonas aeruginosa is a gram negative bacterium, has multiple virulence factors and a wide range of host populations, and is an opportunistic pathogen for humans, as well as significant potential for resistance to antibiotics .Alginate is a mucoid exopolysaccharide that forms a prominent capsule on the bacterial surface and protects the organism from phagocytosis and antibiotic killing.

**Methods:** To evaluate the effect of probiotic Saccharomyces cerevisiae on Pseudomonas aerosinosis alginate, supernatant and lysates of this yeast were used in 20 -hour culture of this bacterium. Finally, we measured this effect, by phenotypic colorimetric method.

**Results:** Saccharomyces cerevisiae lysate and supernatant significantly reduced the production of alginate in Pseudomonas aeruginosa.

**Conclusion:** The results illustrated that S. cerevisiae lysate and supernatant has inhibitory effect aganist 8821 M Alginate , that by more study can suggest as a way to control infections.

**Keywords:** Pseudomonas aeruginosa, Saccharomyces cerevisiae, Alginate

# P783 - 1096: PROBIOTIC LACTOBACILLI AS A PROPER CANDIDATE TO PREVENT BIOFILM FORMATION BY ENTROCOCCUS FAECALIS

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**Background and Aim:** Nowadays, probiotic bacteria and their products are the matter of importance.. By competing for host cell receptors, probiotic bacteria can prevent pathogens attachment in this study the inhibitiory action of probiotic lactobacilli against biofilm formation of E.faecalis was investigated.

**Methods:** In this study 100 samples of urinary catheter were gathered. To investigate biofilm production of pathogenic bacteria, Polyestern Microtiter Plate was used. The existence of esp, ace and eep genes involved in biofilm formation of this bacteria were studied by the use of specific primers and PCR method. Antimicrobial and anti-adhesive effects of L.plantarum ATCC 8014, L.casei ATCC 39392 and L. rhamnosus ATCC7469 were, respectively, examined by Modified Double layer and Polyestern Microtiter Plate methods. The co-aggregation between probiotic lactobacilli and E.faecalis was investigated.The inhibiotion of esp gene expression by the supernatant of probiotic lactobacilli was investigated by RT-PCR method.

**Results:** In this study 60 E. faecalis were isolated out of which 56 of them contained esp gene and 48 of them had all the three genes .Among isolated bacteria, 13/04, 21/73 and 65/21 % had respectively, week, moderated and strong power of biofilm formation. Lactobacillus casie with the growth inhibitory (65 mm) and anti-adhesive (50%) effects were reported as a proper probiotic bacterium.The co-aggregation between L.casei and E. Faecalis was obtained 70%.L.casei inhibited the expression of esp gene about 62%.

**Conclusion:** According to the results, the probiotic lactobacilli have spectacular effects to prevent attachment, biofilm formation and pathogenicity of E. Faecalis.

**Keywords:** Probiotic Lactobacilli, Anti-adhesive, Entrococcus faecalis, Biofilm

# P784 - 1105: IN VITRO EVALUATION OF ANTI-TUMOR EFFECT OF KEFIR SUPERNATANT ON GLIOBLASTOMA CELL LINE U87

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**Background and Aim:** Kefir is a famous probiotic beverage which is originally produced by fermenting milk with kefir grains. Kefir has been proven to have great health improving impacts such as immunomodulation, antibacterial, and anti-inflammatory effects. Also Many studies have already demonstrated its anti-tumor effects on different cancer cell lines. The current study focused on evaluating anti-proliferative effect of kefir cell-free fraction on the Glioblastoma cell line (U87) as the most malignant type of diffuse glioma according to WHO.

**Methods:** U87 cell line was treated with supernatants of kefirs with two different fermentation times (24h and 48h), plus supernatant and pellet obtained directly from homogenized kefir grains. MTT cell proliferation assay was performed to measure cell viability after 24 and 48 hours.

**Results:** According to MTT assay results, kefir supernatant significantly showed a dose-dependent anti-proliferative effect on the cells and between all of the treatments, kefir supernatant with fermentation period of 48h was the most effective on reducing the cell viability.

**Conclusion:** Results indicate that kefir has anti-proliferative effect on the U87 glioblastoma cell line and can be considered an option for further investigations in order to fully achieve its therapeutic capacity.

**Keywords:** Kefir, Probiotics, Glioblastoma, anti-tumor effect

# P785 - 1110: ANTIMICROBIAL AND PROTEOLYTICAL PROPERTIES OF LACTIC ACID BACTERIA ISOLATED FROM IRANIAN FERMENTED MILK PRODUCTS

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1. -

**Background and Aim:** Lactic acid bacteria (LAB) can be isolated from different sources such as traditional yogurt and cheese samples, and the lipolytic, proteolytic and glycolytic enzymes of LAB are important in cheese preservation and in flavour production. Moreover, LAB produce several antimicrobial compounds which make these bacteria interesting for food biopreservation. These characteristics stimulate the search of new strains with technological potential.

**Methods:** From 81 cheese and yogurt samples from cow and goat,431 isolates were obtained on selective agars for LAB. Pure cultures were evaluated for antimicrobial activities by agar antagonism tests and for proteolytic activity on milk proteins by cultivation on agar plates. The most proteolytic isolates were also tested by cultivation in skim milk followed by sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) analysis of the fermented milk.

**Results:** Among the 431 tested isolates ,two of them identified as lactobacillus helveticus and enterococcus faceuim (strains TM61, TMQ71) were bacteriocin producers, whereas eight other ones identified for proteolytic strains as Entrococcus faecalis(TMN1,TM71,TM121,TM124,TM1221,TM1232,TM71,TM581) and Lactobacillus paracasei subs.paracasei(TM581)and lactobacillus helveticus( TM75) showed high proteolytic activity in preliminary assays. The proteolytic capacities of six highly proteolytic isolates identified as Enterococcus faecalis were confirmed by SDS-PAGE, as visualized by the digestion of caseins and whey proteins (β-lactoglobulin and α-lactalbumin).

**Conclusion:** These results suggest potential applications of these isolates or their activities (proteolytic activity or production of antimicrobials) in dairy foods production.

**Keywords:** Lactic acid bacteria, antimicrobials, dairy, identification, proteinase

# P786 - 1114: A NOVEL YOGURT PRODUCT WITH LACTOBACILLUS ACIDOPHILUS

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**Background and Aim:** Health benefits of Lactobacillus acidophilus include providing immune support for infections or cancer, providing a healthy replacement of good bacteria in the intestinal tract following antibiotic therapy, reducing occurrence of diarrhea in humans, aiding in lowering cholesterol and improving the symptoms of lactose intolerance.

**Methods:** The objectives of the research were to study the effects of 0, 1, 10 and 100g of Lactobacillus acidophilus /gal of novel yogurt product on L. acidophilus, yogurt bacteria, coliform, yeast and mold counts and TPA (Texture Profile Analysis) hardness, springiness, chewiness, cohesiveness, and adhesiveness over 0, 1, 2 and 3 months of storage of the novel yogurt product at room temperature.

**Results:** Hardness of product with L.acidophilus use at 100g/gal was significantly lower when compared to the control and treatments 1, 10g/ gal over months 1, 2 and 3. Springiness and chewiness of all treated samples at month 2 were significantly higher vii viii than control. Cohesiveness was significantly higher with all levels of L.acidophilus compared to control.

**Conclusion:** Use of probiotic L.acidophilus at 100g/gal can be recommended in the manufacture of a healthy novel yogurt product such as a yogurt jerkey or bite sized chewable yogurt capable of being stored at room temperature.

**Keywords:** Lactobacillus acidophilus- benefit- Hardness

**Research Ethics**

## P787 - 369: COMPARATIVE INVESTIGATION EFFECTS OF METHANOLIC FUNNEL VULGAR, MATRICARIA CHAMOMILLA AND ZIZIPHUS SPINA-CHRISTII EXTRACTION ON STAPHYLOCOCCUS AUREUS

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1. Student

**Background and Aim:** Before the creation of man plants were created from the past in many cases required human societies as natural cures diseases, strengthen hair growth, the UN Food and even poisoning and killing bringing about have been used. Fennel, chamomile and cedar of the most popular plants are the many properties they are known and the traditional treatment of infections simple, universal beauty and health, improve the taste and quality of food has long been to date been used.

**Methods:** By extraction with methanol to 80% at room temperature and in sterile conditions and by removing the methanol after the dilution from the three plants (with a ratio of 1 ml of extract in 2 ml of methanol, 1 ml of the extract in 3 ml of methanol 1 ml of the extract to 4 ml of methanol and 1 ml of extract to 5 ml of methanol) by drying disc contains extracts under the hood at room temperature and check for disk diffusion method.

**Results:** After comparing and analyzing the data to the conclusion that Methanol extract of fennel on the bacteria in all proportions and all the reviews completely ineffective, Methanol extract of cedar and chamomile has a good effect.

**Conclusion:** The Effect of methanol extract of fennel, chamomile and cedar on the bacterium Staphylococcus aureus to get a positive result and effective power to prevent the proliferation of bacteria extracted from these plants and compared the effects.

**Keywords:** Keywords: fennel, chamomile, cedar, Staphylococcus aureus, Muller-Hilton agar-agar blood, nutrient agar, 80% methanol

The Education and Research in Microbial Sciences

## P788 - 73: THE STUDY INFORMATION SOURCES AND KNOWLEDGE OF STUDENTS NON-MEDICAL UNIVERSITIES IN KERMANSHAH PROVINCE, IRAN ABOUT AIDS/HIV

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**Background and Aim:** Acquired Immune Deficiency Syndrome (AIDS/HIV) is a fatal disease. In developing countries, less attention have been paid to how to inform the society. young people also as at the risk population require more attention regarding to AIDS. This study was aimed to clarify the source of information (SI) of the 4 student groups in Kermanshah's non-medical universities including BSc, Mas, PhD. in non-medical sciences and Doctor's Veterinary Medicine (DVM) about AIDS/HIV.

**Methods:** This cross-sectional prospective questionnaire survey was carried out in non-medical students Kermanshah province of Iran and Knowledge about AIDS/HIV was evaluated. 200 students in grades BSc, Mas, Ph.D. and DVM were included.x2 & one way ANOVA tests and P value<0.05 were applied for statistical analysis.

**Results:** The majority of study population (%72) mentioned television as their main source of information, while only less percentage (%28) obtained information from newspapers, journals and others. A significant correlation between field of study and source type of information were observed (P<0.05).

**Conclusion:** Our result indicated that modification of the red lines existed in strategist sights and the media, especially in RA&TV, will reduce the risk of AIDS/HIV with improving Knowledge, revision and improvement of SI should be a priority for all institutions and universities especially in study area.

**Keywords:** Information Sources , Knowledge , Students, AIDS/HIV

# P789 - 117: ANTIMICROBIAL ACTIVITY OF LICOCHALCONE A AGAINST SALMONELLA TYPHIMURIUM ISOLATED FROM POULTRY FLOCKS

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**Background and Aim:** Licochalcone A (LAA), a natural plant product, is a retrochalcone isolated from the roots and rhizomes of Glycyrriza infata. It has been possess various biological activities. So far, the antimicrobial effect of LAA on Salmonella enterica serovar Typhimurium has not be investigated in world. The present study was carried out to evaluate activities of LAA against S.Typhimurium isolated from poultry flocks.

**Methods:** LAA was purchased from Sigma-Aldrich (Germany), and a stock solution was made in DMSO. Antimicrobial activity of LAA was measured by minimum inhibition concentration (MIC) and minimum bactericidal concentration (MBC). The MICs of LAA against 23 S.Typhimurium isolates was determined in triplicate by broth microdilution, using twofold serial dilutions in Muller Hinton Broth according to the NCCLS procedures. Each plate had a set of positive (Ciprofloxacin+ broth + indicator + bacteria), growth (bacteria + broth + indicator), sterility (LAA in serial dilution + broth + indicator) and solvent (DMSO + broth + indicator) controls. The MBC values were determined by removing 100 $\mu$l of bacterial suspension from MIC well and wells with concentrations higher than the MIC value and inoculating in Muller Hinton agar plates. MBC was recorded as a lowest concentration of LAA which kill 99.9% of the bacterial.

**Results:** The MICs of LAA against 23 S.Typhimurium isolates were ranged from 62.5-1000 µg ml-1. The MBC value of LAA against all isolates was <1000 µg ml-1.

**Conclusion:** Thus, LAA could be a new and useful compound for the development of antibacterial agents for the treatment of salmonellosis.

**Keywords:** Licochalcone A, Salmonella Typhimurium, Antimicrobial activity, Poultry

# P790 - 118: ANTIMICROBIAL ACTIVITY OF EPIGALLOCATECHIN-3-GALLATE AGAINST CLINICAL ISOLATES OF SALMONELLA TYPHIMURIUM

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**Background and Aim:** Salmonella remains one of the most important zoonotic pathogenic bacteria and is the causative agents of salmonellosis. Treatment options are limited due to intrinsic resistance to many antibiotics. Epigallocatechin-3-gallate (EGCG), the major catechin found in green tea, has been shown to have antimicrobial effects against a number of bacterial pathogens.

**Methods:** We evaluated the in vitro activity of this compound against 23 clinical isolates of Salmonella Typhimurium from poultry flocks. EGCG was purchased from Sigma-Aldrich (Germany), and a stock solution was made in DMSO. Antimicrobials activity of EGCG was evaluated by minimum inhibition concentration (MIC) and minimum bactericidal concentration (MBC). MIC and MBC were determined by broth microdilution and colorimetric assay (resazurin).

**Results:** The MICs of EGCG against 23 Salmonella Typhimurium isolates was ranged from 1.56-400 µg ml-1. MBCs value of EGCG were varied against isolates and were ranging from 100-800 µg ml-1.

**Conclusion:** This result show that EGCG displayed potential activity against Salmonella Typhimurium and could be useful compound for the development of antibacterial agents for the treatment of salmonellosis. Although the mechanism of action is not yet clear, further studies to evaluate its clinical potential and role in combination with other antimicrobial agents are warranted.

**Keywords:** Epigallocatechin-3-gallate, Salmonella Typhimurium, Antimicrobial activity, Poultry

# P791 - 126: CLONING OF INDIGENOUS CHITINASE GENE (CHI C)FROM ENDEMIC STREPTOMYCES GRISEUS SP. USING EXPRESSION VECTOR IN E. COLI SYSTEM

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**Background and Aim:** Chitinase C from Streptomyces griseus HUT6037 was the first chitinase of the family 19, found in non-plant organisms and has more hydrolase activity in comparison with bacterial chitinases. Chitinases are enzymes for hydrolytic degradation of chitin and have a broad range of application in pharmaceutical sciences, biomedicine, isolation of yeast and fungal protoplast, removal of hard chitin wastes and industrial enzymes.

**Methods:** Its nucleotide sequence was retrieved from NCBI Gene database using access number of 312191833. Afterward chitinase C gene, was amplified by PCR method, inserted into the pTG19-T vector by TA cloning method using DH5α strain of E.coli as host, then subcloned into pET26b vector, taking advantage of BL21 as host. Efficiency and accuracy of blue-white screening were done using PCR, plasmid extraction and double digestion, and finally, existence of inserted region into the vector was verified.

**Results:** After subcloning into the pET26b vector, this nucleotide sequence was compared to gene sequence data in NCBI using BLASTn bioinformatics software. Result showed that the sequence with 100% overlap, had the most similarity (96%) to gene sequence encoding chitinase C enzyme from Streptomyces griseus.

**Conclusion:** BLASTp results for this amino acid sequence in NCBI showed that this fragment is in accordance with A chain of chitinase C enzyme from Streptomyces griseus HUT6037. the recombinant expression vector was transformed in host cells of BL21 (DE3). So it is possible to efficiently research on distinguishing chitinase active sites, improving performance of these enzymes and, consequently, obtaining chitinase with special characteristics.

**Keywords:** Chitinase, Cloning, Vector, Streptomyces griseus, Amplification

# P792 - 127: ANTIMICROBIAL PROPERTIES OF ORGANIC AND AQUEOUS EXTRACTS OF A MARINE SPONGE SPHECIOSPONGIA VESPARIUM

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**Background and Aim:** Todays, antibiotic resistance has led research to focus on discovering new antimicrobial agents derived from the marine habitat. According to previous researches, some marine sponges have significant antibacterial properties.

**Methods:** Aqueous and organic extracts from marine sponge (Spheciospongia vesparium) collected from the coastline of Iran (Chabahar) were screened against 5 microorganisms, including the bacteria Staphylococcus aureus, Bacillus cereus, Pseudomonas aeruginosa, Escherichia coli, and the yeasts Candida albicans. Extracts was performed by immersion method. Disc diffusion assay was used to determine the inhibition zone diameter (IZD) of the sponge total crude extracts and serial dilutions in tube to determine the minimum inhibitory concentrations (MICs), minimum bactericidal concentrations (MBCs). GC-MS used to identify the most bioactive compounds.

**Results:** The highest activity was obtained for the methanolic extract of Spheciospongia vesparium against the Gram-positive bacteria B. cereus (inhibition zone 20 mm and MIC 0.11 mg/mL) and S. aureus (15 mm and 0.19 mg/mL) and against C. albicans (18 mm and 0.29 mg/mL). Extracts from Spheciospongia vesparium rich in esterol displayed the widest activity spectrum against the tested bacterial isolates.

**Conclusion:** This study shows the potential of Spheciospongia vesparium as new sources of antibiotics.

**Keywords:** Spheciospongia vesparium, Antibacterial, Chabahar, Extract

# P793 - 135: DIARRHEAGENIC ESCHERICHIA COLI PATHOTYPES FREQUENCY IN KHUZESTAN

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**Background and Aim:** Diarrheagenic Escherichia coli (DEC) is an emerging agent among pathogens that causes diarrhea. Studies showed that diarrheagenic E. coli such as enterohaemorrhagic E. coli (EHEC), enteroaggregative E. coli (EAEC), enteropathogenic E. coli (EPEC), enteroinvasive E. coli (EIEC), enterotoxigenic E. coli (ETEC), diffusely adhering E. coli (DAEC) and shiga toxin producing E. coli (STEC) strains are among the most frequent causative agents in acute diarrhea. The aim of this study was to determine the frequency of DEC pathotypes in Khuzestan province.

**Methods:** Stool samples were collected from patients with diarrhea in Khuzestan province of Iran. E. coli strains were isolated using conventional culture and standard biochemical tests. The polymerase chain reaction (PCR) technique was used to detect presence of virulence genes, i.e; eae, stx1 and stx2 for EHEC, bfp and eae for EPEC, LT and ST for ETEC, AA for EAEC, invE for EIEC, stx1 and stx2 for STEC.

**Results:** Altogether, 200 stool samples were obtained from patients, of which 158 (79%) were positive for E. coli. DEC was identified in 127 (63%) of stool samples, which frequency of each pathotypes were as follows: atypical EPEC 49 (39%), typical EPEC 1 (0.7%), STEC 50 (39.3%), ETEC 21 (16.3%), EAEC 5 (4.0%) and EIEC 1 (0.7%). Most frequent etiological agents of diarrhea in Khuzestan province of Iran were STEC and EPEC.

**Conclusion:** Our findings showed DEC had been agent of diarrhea in Khuzestan. This finding provides evidence that effort should be made to estimate the burden of infection by the etiological agent for better medical approach and should raise notification about antibiotic resistance among bacterial infection.

**Keywords:** Escherichia coli, Pathotype, Diarrhea

# P794 - 138: ANTIBACTERIAL ACTIVITY OF CELL-FREESUPERNATANT OF LACTOBACILLUS SPECIES AND SILVER NANOPARTICLES AGAINST SALMONELLA TYPHIMURIUM AND LISTERIA MONOCYTOGENES IN VITRO

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**Background and Aim:** Lactobacillaceae and silver nanoparticles are selected as alternatives to chemical compounds to prevent or treat medical diseases due to their functional properties. In this study, antimicrobial effects of cell free supernatant (CFS) of three different Lactobacillus spp. And colloid nano-silver against Salmonella Typhimurium and Listeria monocytogenes was evaluated.

**Methods:** L. casei, L. acidophilus and clinically isolate of L.salivarius were obtained and each isolate was inoculated in MRS broth and incubated at 37°C for 48 h in theCO2 incubator. Then bacterial suspension was centrifuged (4000 g for 10 min) and CFS have decanted aseptically and sterilized. The antibacterial activity of CFSs and colloid nano-silver against S. Typhimurium and L. monocytogenes were carried out according to the method of broth micro-dilution assay and expressed as minimal inhibitory concentrations (MICs).

**Results:** The MIC values of CSF of all Lactobacillus and silver nanoparticles against tested pathogens were 40 mg/mL and 2.5?g/mL against S. Typhimurium, and 80 mg/mL and 5?g/mL against L.monocytogenes, respectively.

**Conclusion:** All tested antibacterial compounds revealed antibacterial activity on selected pathogens. Combined application of these compounds is proposed.

**Keywords:** Cell Free supernatant, silver nanoparticles, antibacterial activity, lactic acid bacteria

# P795 - 180: EVALUATION OF ANTIBACTERIAL ACTIVITY AND BIOFILM DEGRADATION OF MELITTIN ON ACINETOBACTER BAUMANNII ISOLATED FROM BURN INFECTION

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**Background and Aim:** Acinetobacter baumannii is a dangerous agent responsible for burn infection. Currently, antibiotic resistance is being increased and in these conditions, antimicrobial peptides have suggested to overcome this kind of infections. Accordingly, this study was aimed to evaluation of melittin peptide on degradation of biofilm produced by A. baumannii and killing effect of this peptide on bacteria in depth of biofilm.

**Methods:** Melittin was purified from bee venom by Reverse-Phase HPLC. Biofilm producing ability of strains was evaluated by spectrophotometry. Then, degradation and killing effect of melittin on biofilm and bacteria were examined by spectrophotometry and culture method respectively.

**Results:** The results indicated that all strains have biofilm, production ability and the average of OD was estimated at 0.98. This average was dropped to 0.15 OD due to degradation of biofilm. The culture results showed that all bacteria were killed in different amounts of melittin.

**Conclusion:** The amount of biofilm production was varied among the bacteria. This issue pointed out to this fact that gene expression of biofilm related genes is different subsequently. Degradation of biofilm by melittin would be induced by pore formation in the surface of biofilm and this issue is boosted by increasing in peptide amount too. Killing ability of melittin on bacteria demonstrate that melittin can be able to penetrate across the biofilm and invade to bacteria.

**Keywords:** Acinetobacter baumannii, Melittin, Biofilm production, Biofilm degradation, Spectrophotometry, Culture

# P796 - 190: PATHOGEN AGENTS OF BOVINE MASTITIS IN DAIRY COW FARMS IN ISFAHAN CITY

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**Background and Aim:** Mastitis is one of the most common diseases in the livestock industry. This disease due to decrease in production and quality of milk, increase the cost of medication and treatment as well as the mortality in peracute cases, is one of the most important challenges in the livestock industry in overall the world. This disease could be resulted in the economical disadvantages and human disease, so it is very critical. The purpose of this study was to identify the mastitis producing bacteria in dairy cows in order to prevent cases.

**Methods:** In this study, 40 cows's milk samples with mastitis were collected at dairy cow farms in the Isfahan city and transferred to the laboratory at 40C. The samples were cultured in general culture medium and then subjected to Gram staining and then cultured in specific media. Ultimately the polymerase chain reaction (PCR) was performed for identifying the Spp.

**Results:** In this study, 30 samples (75%) contaminated to Escherichia coli and Streptococcus agalactiae that were the environmental and contagious mastitis pathogens respectively. The highest infections were related to Streptococcus agalactiae with the 63.3% of cases.

**Conclusion:** The results showed that the contagious pathogens (Streptococcus agalactiae) and environmental pathogens (Escherichia coli) were separated from dairy cow farms in Isfahan city and bovine mastitis. The mastitis is still the concern for ranchers and humans as dairy industry consumers.

**Keywords:** Mastitis, Escherichia coli, Streptococcus agalactiae

# P797 - 271: EVALUATING THE ABILITY OF BIOFILM FORMATION AND IDENTIFICATION OF EXTENDED SPECTRUM -LACTAMASE (ESBL) GENES FROM ESCHERICHIA COLI ISOLATED FROM CLINICAL SAMPLES IN ZAHEDAN

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**Background and Aim:** Background and Objectives: Escherichia coli is the main causative pathogen in urinary tract infections (UTIs). Antibiotic resistance based on Extended Spectrum -Lactamase (ESBL) producing Escherichia coli strains is reported to be the cause of community and hospital acquired infections therefore this this is an important problem in public health. The aim of this study was to identify the blaTEM, blaSHV and CTX genes in clinical isolates of E. coli recovered from patients with UTIs in Zahedan, Iran.

**Methods:** Methods and Materials: E. coli isolates (N=60) were analyzed by biochemistry and phenotypic methods. Each of the initial E. coli screening test isolate was investigated for the presence of blaTEM, blaSHV and blaCTX-M genes via polymerase chain reaction (PCR) using gene-specific primers.

**Results:** 60 tested isolates; the prevalence of blaTEM and blaCTX-M genes was determined to be 68.3%, 46.6% but blaSHV gene was not detected. Based on phenotypic tests, biofilm capacity was detected in 10 clinical isolates.

**Conclusion:** The results of this study show that the use of adequate doses of antibiotics in the treatment of infections may be caused by biofilms are emphasized. Rapid detection of biofilm formation, therefore isolates have the ability to decide care and management is necessary.

**Keywords:** Escherichia coli, blaTEM, blaCTX-M, blaSHV, biofilm

# P798 - 314: THE LEVEL OF AWARENESS OF MOTHER TO TAKE CARE OF TUBERCULOSIS CHILDREN IN HEALTH INSTITUTIONS IN LARESTAN.

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**Background and Aim:** Tuberculosis(TB) is an infectious disease that causes weakness for patient and bring him to the chronic step. In order to reduce the period of disease and prevention is necessary to take care of patient carefully. It is depended to knowledge and awareness about diseases.

**Methods:** In this study that has been done in the style of descriptive; we survey the level of 165 mother's awareness about Tuberculosis-who approach the health institutions of township, in a six month period by a checklist. The questions of questionnaire has been valued and graded in three steps; low (4 grades), average (8 grades) and good (12 grades). The data is analyzed by SPSS (version 11.5).

**Results:** The results of investigation show; the level of mother's awareness about TB and taking care of TB, for 111 person(67.3 %)was low, 35 person(21.2%) was average and in 19 person(11.5%) was good. Anova test shows a significant relationship between mother's awareness low and their education ($P<0.002$ $F=6.371$). 15 of mothers (78/9%) who had good awareness, had high education. Statistical test did not show a significant relationship between mother's awareness and their age.

**Conclusion:** The knowledge about illness is the first step in taking care of a patient. The researches show, awareness about illness, will be better monitoring. In order, TB is important disease and mother's awareness is weak, that is consequent; the mother's have not high education or they are non-medicine education. It is necessary to teach some information about infection disease in university course and mass media try to inform people.

**Keywords:** awareness, mothers, Tuberculosis, larestan

# P799 - 316: EPIDEMIOLOGICAL POSITION OF LEISHMANIASIS IN SOUTH OF IRAN

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**Background and Aim:** Leishmaniasis is a native disease in larestan, and lots of people, yearly, are infected with this parasitic disease. There have been great change in its epidemiological situation through two decades ago.

**Methods:** In the middle of 80s, the existence of the rural cutaneous leishmaniasis in the cities . In the words, the construction of small town around the city, caused human to enter an environment where will rodents live. Most of these family were young couple who had newborn babies. An increase in unimmune people (as a result of new births) and the entrance of human to the center of rodents gathering caused of epidemic rural leishmaniasis in the city.

**Results:** The increase in the acceptance of university students in different fileds of study in the middle of 90s, caused unimmune immigrants (university students) to enter the region.During these years, seasonal rainfall (summer) made suitable places for sand flies to grow in . this factor mixed with unimmune immigrants and created another epidemic.

**Conclusion:** In fact, personnel's attention while observing of samples, development of personnel's knowledge, can caused increase of the disease statistics. Lack of correct diagnosis; caused , contaminated person act as a source of infection in the region. Retraining personnel and improving the diagnostic methods, can control the communicable diseases in region.

**Keywords:** Epidemiological, Leishmaniasis, Iran

# P800 - 362: THE EFFECT OF HETEROLOGOUS EXPRESSION OF BCSD GENE FROM GLUCONACETOBACTER XYLINUS INTO ESCHERICHIA COLI ON CELLULOSE AMOUNT AND CRYSTALLINITY

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**Background and Aim:** To evaluate the produced cellulose amount and crystallinity index of the cellulose produced by Escherichia coli Nissle 1917 after heterologous expression of the bacterial cellulose synthase subunit D (bcsD) gene of Gluconacetobacter xylinus BPR2001.

**Methods:** bcsD gene of G. xylinus BPR2001 was expressed in E. coli Nissle 1917 and its protein product was visualized using SDS-PAGE. FTIR and X-ray diffraction (XRD) analysis were done for evaluating crystallinity indices. Furthermore, the amount of produced cellulose was measured by weighting dry cellulose and Congo red assay.

**Results:** FTIR analysis showed that the crystallinity index of the cellulose produced by the recombinants was 0.84, which is 16% more than that of the wild type strain. Furthermore, XRD analysis confirmed cellulose crystallinity enhancement. The quantitative analysis revealed that the cellulose content was not changed significantly after over expressing the bcsD.

**Conclusion:** Crystalline structure of the bacterial cellulose can improve by bcsD gene expression, but there is not any significant difference between the amounts of cellulose produced by the recombinant and wild type E. coli Nissle 1917.

**Keywords:** Bacterial cellulose, bcsD, Escherichia coli Nissle 1917, FTIR, Gluconacetobacter xylinus

# P801 - 365: STUDY OF ANTIFUNGAL INFLUENCE LAWSONIA INERMIS L. VOLATILE OIL

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**Background and Aim:** Because of its special geographical situation, Iran is covered with a mass of variuos and useful plants. This variety of plants caused people to think about usage of medicinal plant in order to treat variuos illnesses. According to univer ities and other scientific centers and their studes professors and students the study of medicinal plats and their extracts preparation and effects of these extracts on the variuos microbes and fungi have been found special arrangment. The studies about this subject performed in this thesis is following.

**Methods:** Leaves of lawsonia inermis plant that have been prepared from Kerman area, local market, sistan and blochesthan area and by Gol Darou Co. have been studied in this thesis. The leave extract was taken by distillation method and usage of water with 0.2% volume weight output. In order to observe its fungicidal effects, we studied it extract effects on three kinds of disease maker dermatophytes as follwing: Trichophyton mentagrophytes, microsporum cannis and microsporun gypseum after preparing cultivation conditiuos of fungus stubs that has been obtained from fungi and industrial bacteria collection center of Iran (PTCC) to determain the MIC & MFC.

**Results:** MIC for microporum cannis with 25 mg/ml extracts and for microsporum gypseum and trichophyton mentagrophytes with 12.5 mg/l was determined. MFC for microsporum cannis with 50 mg/l extract and for microsporum gypseum and trichophyton mentagrophytes with 25 mg/l was determined.

**Conclusion:** Lawsonia inermis L. volatile oil has effect on antifungal influence.

**Keywords:** Dermatophytes, Volatil oil, lawsonia inermis

# P802 - 397: INFLUENCE OF THE BACTERIAL LEADER SEQUENCE ON THE SOLUBILITY OF SCFVS

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**Background and Aim:** Single chain Fragment variable (scFv) is an antibody fragment containing variable regions of heavy and light chains. ScFvs improve their penetrability into tissues while retaining specific affinity and having low immunogenicity. Correctly folded scFv antibodies contain two disulfide bonds. Expression of scFv in reducing bacterial cytoplasm leads to the formation of insoluble inclusion bodies. One approach to achieve a functionally active scFv is to translocate the scFv into the oxidized environment of the periplasm where the possibility for disulfide bond formation is increased. This can be achieved by cloning the gene in a vector containing N-terminal pelB leader peptide that export foreign proteins to the periplasm. The aim of this study is to evaluate the influence of periplasmic localization using pelB leader peptide on the solubility of anti HER2-scFv.

**Methods:** Anti HER2-scFv gene was cloned between NcoI and XhoI sites of pET22-b (+) containing pelB leader peptide and in same sites of pET28 (without pelB). The expression in BL21 (DE3) was induced using 1mM IPTG at 37◦C. Then, the solubility of anti HER2-scFv was determined. Briefly, the harvested bacteria of the induced cultures was resuspended in lysis buffer and the soluble and insoluble fractions were separated after sonication. The fractions were analyzed by SDS-PAGE.

**Results:** Anti-HER2 scFv was expressed by both pET22-b (+) and pET28 vectors in BL21 (DE3). The amount of soluble anti HER2-scFv was higher in pET2 b (+) than that in pET28.

**Conclusion:** High-level expression of the functional anti-HER2 scFv can be obtained in pET22 (+).

**Keywords:** anti-HER2 scFv, disulfide bonds, solubility

# P803 - 406: APPLICATION OF BACTERIA IN THE DIAGNOSIS AND TREATMENT OF CANCER

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**Background and Aim:** Cancer is a disease in which the growth of invasive cells increases, which may also migrate to other parts of the body. The main cause of death in cancer is the metastasis. For years, scientists have been trying to control the progression of cancer through the utilization of bacteria. Microorganisms are one of the known causes of cancer, for example, gastric cancer in humans and animals is due to Helicobacter pylori. But treating cancer using bacteria was first proposed by a surgeon, William B. Coley, one hundred years ago.

**Methods:** This is a review article and the articles have been used from PubMed, ScienceDirect and Google Scholar.

**Results:** Various studies have suggested that bacteria can control the progression of cancer.

**Conclusion:** Recently, it has been said that cancer cells can be destroyed using biofilms of bacteria and bacterial macromolecules. However, the way bacteria act in cancer is really obscure. The formation of biofilms and the utilization of bacterial products to control metastasis can be a good start for cancer prevention or treatment, and some studies have proved them to be useful. However, this requires more investigation and testing. This article reviews the studies on cancer treatment using bacteria.

**Keywords:** cancer, bacteria, treatment of cancer

# P804 - 415: BIOINFORMATICS ANALYSIS OF ENDOLYSIN GENE OF A LACTOCOCCUS GARVIEAE BACTERIOPHAGE

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**Background and Aim:** Lactococcosis is a hyperacute systemic disease of fish, which is caused by Lactococcus garvieae. It has become one of the devastating problems due to its serious economic damage in aquaculture. L. garvieae is one of the most serious aquatic pathogens in trout farms of Iran due to the elevated rates of mortality, decrease in the growth rate of fish, and unpleasant appearance of the infected fish. Bacteriophages and their cell wall degrading enzymes (endolysins) can be used to destroy bacterial cells without harming animal hosts.

**Methods:** In this study the endolysin gene of a specific phage of L. garvieae was analyzed by bioinformatics tools to obtain its activity and specificity. This gene was compared with other previously reported endolysin sequences and the phylogenetic tree was drawn by MEGA7 software.

**Results:** Bioinformatics analysis revealed that this phage has two distinct ORFs (ORF1 and ORF15) for cell wall degrading enzyme. ORF1 showed low similarity to CHAP (cysteine, histidine-dependent amidohydrolases/peptidases) domain that corresponds an amidase. The product of ORF15 showed 46% similarity to the PlyCA domain of the phage C1 endolysin.

**Conclusion:** Some bacteriophages have two distinct genes for cell wall degrading enzymes. Presence of both subunits is necessary for enzymatic activity. Based on bioinformatics results, this multimeric enzyme catalyzes the hydrolysis of the amide bond connecting N-acetylmuramic acid and L-alanine of the murein pentapeptide. This endolysin can be potentialy used as a therapeutic agent to treat bacterial infections.

**Keywords:** Lactococcus garvieae, Bacteriophage, Endolysin, Bioinformatics

# P805 - 420: STUDY ON PREVALENCE OF PROTEUS MIRABILIS INFECTION IN DOGS OF URMIA REGION

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**Background and Aim:** A urinary tract infection (UTI) refers usually to a bacterial infection of any or all parts of the urinary tract. The predominant species associated with UTI, Proteus mirabilis and Staphylococcus intermedius/Staphylococcus pseudintermedius. Proteus mirabilis considered as an etiological agent of 10% of urinary tract infections and also the fifth most common cause UTI in the hospital. Approximately 14% of all dogs will acquire bacterial UTI during their lifetimes. Object: The purpose of the present study is to determine the prevalence of Proteus mirabilis in different samples from dog.

**Methods:** The present study was conducted in 1395 year for 6 month period, and done with dogs that referred to veterinary clinic of Urmia University and private clinics in Urmia city. All subjects had one or more of the following symptoms: Fever, Inability to hold urine, Lethargy, Diarrhea. Four reproductive tract samples, three urinary tract samples, three dog eyes and skin wound, five dog poop samples were collected. Samples were cultured on blood agar and MacConkey's agar media. Then the bacteria grown on the plates were identified by conventional biochemical methods.

**Results:** That Of 12 culture positive samples for Proteus mirabilis, 27% isolated from reproductive tract, 20% urinary tract, 20% dog eyes and skin wound, 13% dog poop.

**Conclusion:** In any case, the present study showed that Proteus mirabilis could be detached from different part of the body. Although prevalence of reproductive tract infections is the most common area of this bacteria. These findings may contribute for a better understanding of the agents involved in the pathogenesis of UTI.

**Keywords:** Dogs, Proteus mirabilis, Reproductive tract, Urmia, UTI

# P806 - 424: PA2070 GENE IN BIOFILM-FORMING CLINICAL PSEUDOMONAS AERUGINOSA ISOLATES

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**Background and Aim:** Pseudomonas aeruginosa is an opportunistic pathogen, notorious for multidrug resistant infections. The formation of biofilm by Pseudomonas spp. isolates profoundly impedes eradication of infection. Therefore, understanding of mechanisms associated with biofilm formation contribute to better management of Pseudomonal disease. Many genes and factors affect biofilm formation in Pseudomonas isolates. In this study, we investigate the prevalence of pa2070 gene (encoding hypothetical protein with unkown function) in biofilm-forming Pseudomonas isolates.

**Methods:** A total number of 100 Pseudomonas isolates were collected from clinical samples. DNA was extracted from all isolates and the presence of pa2070 gene was detected by Polymerase Chain Reaction (PCR). Biofilm production was evaluated using 96-well microtiter plate assay.

**Results:** Based on PCR results, all samples were positive for pa2070 gene. Moreover, 25 of 100 isolates were classified as biofilm producers.

**Conclusion:** Based on results from this study, it could be inferred that pa2070 gene is present in all Pseudomonas spp. isolates. On the other hand, because only 25% of isolates were biofilm-producer, in seems that there is no correlation between presence of pa2070 gene and biofilm production and this gene has a role in bacterial structure rather than biofilm formation.

**Keywords:** Pseudomonas aeruginosa, biofilm, pa2070 gene

# P807 - 483: STUDY EXTRACELLULAR METABOLITES FROM MICROALGAE AND THEIR BIOTECHNOLOGICAL APPLICATIONS

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**Background and Aim:** Microalgae as the first ancestors of life in the earth, have various potentials that make them suitable for applied biotechnology, biology and also environments. These microorganisms have autotroph as well as heterotrophic forms of life. Besides these abilities, they can produce and secrete various kinds of metabolites during their growth in and/or out of their cells. So extracellular metabolites (EM) that will found in the culture media are discussed.

**Methods:** In this research, different kinds of extracellular metabolites of microalgae and their applications have been studied.

**Results:** According to the studies, microalgae can secret various kinds of extracellular metabolites that usually released into their culture media and most of them are unknown. The most important groups of these categories can be defined as: exopolysaccharides (EPS), extracellular proteins, organic acids,extracellular lipids,extracellular phytohormones and allelopotic chemicals.

**Conclusion:** Microalgal EM are applied compositions in different fields such as: medical, food, feed, industry, cosmetics, pharmaceutical, MEOR and bioremediation. As most of these metabolites and their abilities are unexploited so studying their types, biosynthetic pathways and also methods to increasing their production is important. It should be considered that their recovery and purification from media is also should be optimized.

**Keywords:** Biotechnology, extracellular metabolites, microalgae

# P808 - 508: EVALUATION OF THE EFFECT MEDICINAL OF A 405-NM DIODE LASER ON ANTIBIOTIC-RESISTANT CLINICAL ENTEROCOCCI ISOLATES (IN VITRO)

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**Background and Aim:** Enterococci are part of the natural flora of the digestive tract in humans. However, antibiotic-resistant enterococci is considered as a major contributor to hospital infections. The purpose of the study was to evaluate the effect of a diode laser with a wavelength of 405nm and a power of 30mw at 180s on the survival of an antibiotic resistant enterococci.

**Methods:** 30 clinical isolates of enterococcus bacteria were tested for sensitivity to Oxacillin antibiotics according to standard CLSI diffusion method. Ten isolates with the highest antibiotic resistance were selected and diode laser with a wavelength of 405nm and a power of 30mw for 180s were beamed on them and investigated.

**Results:** The Results of our antibiotic susceptibility test showed that among 30 isolates resistant to antibiotic enterococci, 27 isolates (90%) were resistant to Oxacillin antibiotics. The results of the diode laser radiation showed that the lowest survival rate of the intended isolates was at 405nm and 30mw for 180s (2.98%).

**Conclusion:** Based on the results obtained, the antibacterial effect of the diode laser is at 405 nm and 30mw for 180s. Therefore, it is recommended to use a 405 nm diode laser to eliminate clinical strains of antibiotic-resistant enterococci.

**Keywords:** Enterococcus, Antibiotics Resistance, Diode Laser

# P809 - 550: ANTIVIRAL ACTIVITY ASSAY OF CHLOROPHORMIC, METHANOLIC AND ALKALOID FRACTION OF CHELIDONIUM MAJUS AGAINST HERPES SIMPLEX TYPE1 USING PCR

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**Background and Aim:** Herpes simplex type I (HSV-I) can cause different kinds of chronic infections which could be treated well by nucleoside analogues. However, due to viral resistance and adverse effect of such treatments, studies to find the new compounds originated from natural sources such as herbal medicines are increased. Chelidonium majus, is well-studied in this regard and shows promising effects. Quantitative Real-Time PCR (qRT-PCR) is one of the most reliable and sensitive methods in antiviral assays. In current study, the antiviral activity of methanolic and chloroform extracts and alkaloid fraction of Chelidonium majus was evaluated on HSV-I by qRT-PCR method.

**Methods:** The toxicity assay of the extracts and alkaloid fractions was evaluated by MTT and Trypan Blue methods on HeLa cell line. At the next step, the antiviral activities were assayed in different concentrations and exposure time by qRT-PCR. The expression level of gD gene was optimized and used in qRT-PCR.

**Results:** Although the chloroform extract and alkaloid fraction showed antiviral effects, the methanolic extract at concentration of 0.2 mg/ml had the highest antiviral activity with no cytotoxicity effect on the HeLa cells. The alkaloid fraction showed the cytotoxicity effect as well. The antiviral activity of chloroform and alkaloid fraction was 0.4 mg/ml and 20 mg/ml, respectively.

**Conclusion:** The methanolic extract of the Chelidonium majus showed more antiviral activity compared to chloroform extract and alkaloid fraction with no cytotoxicity effect. However, in future work the main compound which is responsible for this effect should be studied.

**Keywords:** Herpes simplex type I (HSV-I), Chlidonium majus, methanolic extract, chloroform extract, alkaloid fraction, antiviral activity assay, qRT-PCR

# P810 - 572: ANTAGONISTIC EFFECT OF BACTERIA ISOLATED FROM SOIL IN TEHRAN PROVINCE AGAINST RHIZOPUS ORYZAE GROWTH

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**Background and Aim:** Rhizopus oryzae fungi is the main cause of Mucoromycosis disease in humans, also, this fungi due to very high growth rate is infecting mycological culture environments and has created problems for researchers in the field. Accordingly, the control of this fungus is important. The purpose of this study is investigating the antagonistic effect of bacteria isolated from soil in Tehran province against the growth of Rhizopus oryzae.

**Methods:** In this study, an antagonistic effect of 175 strains of bacteria which has been isolated from the soil of Tehran previous studies was investigated by qualitative method against Rhizopus oryzae fungus. For this purpose, the potato dextrose agar (PDA) culture medium was used. The bacteria with inhibitory effect were identified through molecular method against Rhizopus oryzae fungus. Therefore, the genome of bacteria is extracted by phenol chloroform technique and was sequenced with known primers such as a piece 16s of a 16S rRNA gene belong to the bacteria.

**Results:** The study showed that from the total number of studied bacteria, only 17 isolates (9.7%) have ability of antagonistic effects against Rhizopus oryzae. These bacteria in the order of magnitude are: Bacillus subtilis bacteria (9 cases), bacillus amyloliquefaciens bacteria (5 cases) and bacillus methylotrophicus bacteria (2 cases).

**Conclusion:** This study was conducted in Iran for the first time. Few studies were performed in abroad that have been confirmed the antagonistic effect of bacillus amyloliquefaciens bacteria on Rhizopus oryzae fungi.

**Keywords:** Rhizopus oryzae, Bacillus, Antagonistic effect

# P811 - 607: AN ARABIDOPSIS THIONIN-LIKE PEPTIDE WITH ANTIBACTERIAL ACTIVITY

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**Background and Aim:** Plant antimicrobial peptides have been isolated from different tissues and organs of a wide variety of plant species with activities against pathogenic organisms of humans and plants. We have studied the gene At2g20618 which belongs to the group of so-called thionin-like genes from Arabidopsis with 67 members.

**Methods:** To study the antimicrobial activity of the encoded ThiL20 peptide we cloned the coding sequence into a pETtrx1-a derived expression vector together with a FATT tag. The fusion protein was expressed in the E. coli strain C3030and purified using an anion exchange column. The fusion protein was digested with TEV protease and the ThiL20 peptide was purified using reverse-phase chromatography. The antibacterial activity of the ThiL20 peptide was investigated with different concentrations against E. coli and Pseudomonas syringae in vitro.

**Results:** The results of antimicrobial tests using the liquid broth culture with different concentrations showed that the ThiL20 peptide had IC50 values of 49 and 27 µg/ml, respectively against E. coli and P. syringae.

**Conclusion:** The Arabidopsis thionin-like peptide ThiL20 has antibacterial activity.

**Keywords:** Arabidopsis, thionin-like peptide, antibacterial

# P812 - 630: IDENTIFICATION OF NEW BACTERIOPHAGES BY CLONING-SEQUENCING METHOD

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**Background and Aim:** Bacteriophages or bacterial viruses are found wherever bacteria exist and have high specificity for their bacterial hosts. These particles are considered to be the most abundant forms of life on Earth. Unlike bacteria, bacteriophages do not have universal conserved sequences to help researchers for molecular identification.

**Methods:** In this study, genomic DNA of novel phages were isolated, and then treated with restriction enzymes. After treatment of a vector with the same enzymes, phage restriction fragments were cloned into the vector. Recombinant vectors were transformed to Escherichia coli DH5α and amplified. The presence of phage insert was confirmed with colony PCR using vector-specific primers. After purification of the recombinant vector, the phage genomes were partially sequenced.

**Results:** The result of colony PCR revealed that the cloning and transformation processes were successfully performed. Based on the sequencing results and bioinformatics analysis, all phages were distinguished as new viral species.

**Conclusion:** The results of present study suggest the cloning-sequencing method as an efficient molecular technique to identify uncharacterized bacteriophages.

**Keywords:** Bacteriophages, Cloning, PCR, Sequencing

# P813 - 646: DESIGN OF RAPID ASSAY FOR DETECTION OF ANTI-HBC IGM IN SERUM OF INDIVIDUAL INFECTED TO HEPATITIS B VIRUS

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**Background and Aim:** Hepatitis is one of the leading causes of death in the world. HBC is one of the hepatitis B protein, a protein immunogen is strong and one of the serological markers of acute infection with HBV. aim in this study was to design a rapid assay for simultaneous screening of serum samples for IgM anti-HBc in infected serum.

**Methods:** The coding sequence of genotype D of HBC extracted from the database Uniport and optimized by codon bias of E. coli, then subcloned between the BamHI and ECORI restriction sities of pET22b vector. Recombinant Vector transformed to BL21 cells that are was competented by chemical ways. HBC protein expression was induced by adding IPTG. The His-tagged HBcAg was purified from prepared periplasmic fraction using Ni-NTA affinity chromatography with an average yield of 20 mg/L culture. Its sensitivity and specificity were determined by ELISA. HBc was developed using nano-gold labeled and was used as conjoge antigene in imono chromatography.

**Results:** SDS PAGE showed that HBC successfully expressed in E. coli cells. The results of the SDS PAGE indicate that protein by mentioned method of purification has more than 90% purity. Analysis of ELISA results and comparison with the HBC trade shows that the protein has a sufficient sensitivity and specificity.

**Conclusion:** The expression of HBC by periplasmic method is a useful and easy to prepare this antigen and ELISA results confirms the sensitivity and specificity.

**Keywords:** Hepatitis B virus, Periplasmic expression, protein purification, HBcAg, Rapid assay

# P814 - 1500: MOLECULAR DETECTION OF SHIGELLA SPP. CONTAMINATION IN READY TO EAT SALAD SAMPLES IN WEST OF TEHRAN

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**Background and Aim:** Shigella bacteria can infect human body by taking contaminated food and water and are transmitted from person to person. human body is the only natural host for this bacteria. The aim of this study was to detect Shigella contamination in pre-packed samples of salads at restaurants in western regions of Tehran city using PCR method.

**Methods:** To conduct this research, 90 samples were purchased from the restaurants during the period of June to November 2016. The samples were cut into very small pieces, homogenized and then kept in the – 20 °C. A 25g portion of these samples was added to 225 ml of Shigella broth media containing novobiocin and incubated for 24 hours. Then DNA of cultured samples was extracted using DNP™ kit (CinnaGen, Iran) and PCR method was optimized for amplification of 613 bp ipaH gene and performed on extracted DNA of all samples (before and after enrichment in Shigella broth).

**Results:** Shigella contamination were detected in 7(7.8%) and 20(22.2%) of the tested samples before and after the enrichment, respectively.

**Conclusion:** The results showed the contamination with Shigella bacteria in remarkable percentage of the samples and revealed the necessity of more attention and supervision in the process of production and distribution of pre-packed salads. Besides, the findings points to the importance of enrichment in increasing the sensitivity of the PCR method to detect the bacteria in food samples.

**Key words:** Shigella, Pre-packed salads, ipaH Gene, Tehran, PCR

# P815 - 658: EVALUATION OF MUTAGENICITY AND CARCINOGENICITY OF OPIUM USING THE AMES TEST

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**Background and Aim:** Cancer is one of the most common diseases in the world. Due to the carcinogenic combinations of drug, there is a risk of mutagenic substances in consumers.The aim of this study is to investigate the mutagenicity of opium by the Ames test.

**Methods:** Firstly, Salmonella typhimurium TA100 was confirmed in terms of the purity of mutation property. Then, samples of opium separately in different volumes and by various repetitions were added culture medium containing TA100 fresh night culture, and subsequently were measured without pre incubation by negative control samples. Then, colonies were evaluated in terms of mutagenicity in three stages, without the buffer microsomal rat liver (S9) - without pre incubation, with S9 – with pre incubation, and with S9 - without pre incubation, and the results were investigated by using the mean difference variance (ANOVA).

**Results:** Based on the results of data analysis, recursive colonies were mutagenic in volume and various repetition in dilutions up 0/04. In the case mutagenesis of opium, there were significant differences in dilution and repetition of without S9 and with S9 and with S9 without pre incubation compared to negative controls.

**Conclusion:** The results of this research showed that opium is fully and on all volumes mutagenic. Therefore, we recommend taking these drugs should be avoided.

**Keywords:** Ames test, mutagenesis, opium, cancer, Salmonella typhimurium, TA100

# P816 - 660: COMPARING ANTIBACTERIAL EFFECTS OF GARLIC WITH ANTIBIOTICS BY STAPHYLOCOCCUS AUREUS RESISTANT TO METHICILLIN, STREPTOCOCCUS PNEUMONIAE AND SHIGELLA DYSENTERIAE BACTERIA

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**Background and Aim:** One of the most important researches is related to garlic and it has great anti-bacterial properties. The purpose of this research is the evaluation of garlic extract effect with various concentrations on Staphylococcus aureus, Streptococcus pneumonia and Shigelladysenteriae bacteria and also comparing the results in laboratory situation.

**Methods:** In this study, garlic extract was prepared and to determine the Minimum Inhibitory Concentration (MIC) of the extract, the Standard Tube Test was used. As well as, to compare with antibiotics, the Disk Diffusion Method was used.

**Results:** The MIC of garlic extract based on Mg/dl on studied bacteria with extract of respectively: 15, 23 and 25mm with concentration of 1/2 Mg/dl; 12, 20 and 22mm with concentration of 1/4Mg/dl; 10, 16 and 18mm with concentration of 1/8 Mg/dl; 0, 13 and 15mm with the concentration of 1/16, 1/32 and 1/24 was zero. According to the results of this research in laboratory condition anti-bacterial properties of garlic has the inhibitory effect on studied bacteria.

**Conclusion:** The results indicate that the inhibitory effect of garlic extract on studied bacteria, in laboratory environment, is as good as antibiotics.

**Keywords:** Garlic extract, MIC, inhibitory effect, anti-bacterial properties

# P817 - 740: BACTERICIDAL EFFECT OF A 810-NM DIODE LASER ON ANTIBIOTIC-RESISTANT ENTEROCOCCI ISOLATES (IN VITRO)

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**Background and Aim:** Enterococci are among the normal microbial flora in human and animals digestive tract. The nosocomial pathogenicity of enterococci has emerged in recent years. The purpose of the study was to evaluate the effect of a diode laser with a wavelength of 810nm and a power of 30mw at 180s on the survival of an antibiotic resistant enterococci.

**Methods:** 30 clinical isolates of enterococcus bacteria were tested for sensitivity to Pipracillin antibiotics according to diffusion method. Ten isolates with the highest antibiotic resistance were selected and diode laser with a wavelength of 810nm and a power of 30mw for 180s were beamed on them and investigated.

**Results:** The Results of our antibiotic susceptibility test showed that among 30 isolates resistant to antibiotic enterococci, 27 isolates (90%) were resistant to Oxacillin antibiotics. The results of the diode laser radiation showed that the lowest survival rate of the intended isolates was at 810 nm and 30 mw for 180s (0.58%).

**Conclusion:** Based on the results obtained, the antibacterial effect of the diode laser is at 810nm and 30mw for 180s. Therefore, it is recommended to use a 810nm diode laser to eliminate clinical strains of antibiotic-resistant enterococci.

**Keywords:** Enterococcus, Antibiotics Resistance, Diode Laser

# P818 - 751: A NOVEL EXTREMOPHILIC DYE PEROXIDASE FROM KOCURIA PALUSTRIS: CLONING, EXPRESSION AND PURIFICATION

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**Background and Aim:** Peroxidases [donor: hydrogen peroxide (H2O2) oxidoreductase] are ubiquitous enzymes that require H2O2 or other peroxides to oxidize a wide range of reducing substrates. These enzymes are commonly grouped into plant and animal peroxidase superfamilies. The Kocuria palustris peroxidase that was previously isolated from eastern part of Urmia salt lake in Iran could be an important enzyme because it is from a halophilic bacteria sources.

**Methods:** In this study, desired gene was amplified from Kocuria palustris genome by PCR using specific primers, and then cloned into the pET21. Expression condition was examined using different concentration of IPTG at different temperatures. The expressions were compared by SDS-PAGE and activity analysis. The optimum expression condition was obtained in 0.8 mM IPTG at 37º C.

**Results:** The peroxidase gene with 1100 bp was cloned into pET21 and expressed using 0.8 mM IPTG for 5 hours at 37? C. The expressed protein was then purified and its activity was determined. The molecular weight of the enzyme was 41 kDa. Optimal pH and temperature for the enzyme was 3 and 37? C, respectively. The enzyme was stable at 90° C for 30 minutes.

**Conclusion:** A novel dye-peroxidase was isolated from Kocuria palustris and cloned into E. Coli. Subsequently, the enzyme was purified by Ni-Sepharose column and assayed with ABTS and H2O2 as substrates. This enzyme could have industrial and diagnostic application.

**Keywords:** Dye peroxidase, Kocuria palustris, halophilic enzymes, purification, expression, cloning

# P819 - 790: THE EFFECT OF SIGNAL PEPTIDE ON THE AMYLOID FIBRIL FORMATION OF A NOVEL LIPASE FROM PSEUDOMONAS SP.

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**Background and Aim:** More than 40 human diseases have been associated with the formation of extracellular fibrillar aggregates known as amyloid fibrils or structurally related intracellular deposits which is an important process in protein chemistry, biology, pathology and biotechnology. A lipase from pseudomonas was previously isolated from south of Iran. This lipase can give amyloid like fibrils under physiological conditions.

**Methods:** Bioinformatic software such as Tango and Zyggregator were used to find amyloidogenic regions in amyloid fibril formed by lipase. N-terminal of the mentioned lipase with 28 amino acids was selected as a most potential region for fibril formation. In order to omit the N-terminal segment specific primers were designed. Subsequently, the gene encoding a full length lipase (previously cloned into pET28a) was used as a template in the PCR mixture.

**Results:** The PCR product obtained for truncated gene was digested and cloned into NdeI and XhoI restriction sites of an expression vector, pET21a. The constructed recombinant plasmid was transformed into E.coli BL21 and expressed under optimal condition (0.8 mM IPTG at 30 °C for 7 hours). Amyloid fibril formation of purified constructs (with and without N-terminal) were compared using thioflavin-T and congo-red and the results showed significant differences.

**Conclusion:** Signal peptide which is a hydrophobic region of lipase has a significant effect on amyloidogenesis of this industrial enzyme.

**Keywords:** Lipase, pseudomonas sp, signal peptide, amyloid fibril

# P820 - 791: THE EFFECT OF CLIP-BASED LEARNING ON ACADEMIC ACHIEVEMENT AND SATISFACTION OF HEALTH STUDENTS OF BIRJAND UNIVERSITY OF MEDICAL SCIENCES

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**Background and Aim:** In new era of e-learning technology, the models of microbiology education are changing. To improve the quality of learning microbiology, presenting multimedia clips in the classroom is a matter of debate between educators. This study aimed to evaluate the effect of presenting multimedia clips on academic achievement, diminishing shelf life of learning and satisfaction of learners during microbiology courses.

**Methods:** This study was conducted on B.Sc. students of health in Birjand University of Medical Sciences. Students who took part in microbiology course were randomly divided in two groups of case (No:35) and controls (No:35). In case group, teaching was based on a combination of presenting PowerPoint slides and multimedia clips while in control group, the teaching was only based on PowerPoint slides presentation. At the end of the semester, the rate of satisfaction, academic achievement and diminishing shelf life of learning was compared between the two groups. The data were collected by standard questioner and developmental/congestive tests. The data were analyzed by SPSS, v.21.

**Results:** There was no significant difference between the rate of satisfaction of case and control groups (P=0.85). However, it was shown that the academic achievement was significantly higher in case groups (P=0.001). The diminishing shelf life of learning was significantly more in case group (P=0.003).

**Conclusion:** Presenting multimedia clips to students during microbiology courses is a powerful tool for learning. Development of multimedia clips as a main part of learning content in microbiology is suggested.

**Keywords:** Microbiology, E-learning, Multimedia clips, E-content

# P821 - 808: ASSESSMENT OF KNOWLEDGE AND PREPAREDNESS IN STUDENTS OF MEDICINE, DENTISTRY, NURSING AND MEDICAL LABORATORY ABOUT BASIC CONCEPTS OF BIOTERRORISM AND MICROBIAL ATTACKS

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**Background and Aim:** Bioterrorism is the use of viral, microbial and parasitic agents or their products to cause fear of humans and the destruction of livestock. Iran can be vulnerable to bioterrorism attacks. The medical community of the country, as the first group to deal with patients, must be well known about the bioterrorism. The aim of this study was to assess the knowledge and preparedness levels of medical, dentistry, health and nursing students after passing the course of microbiology.

**Methods:** This descriptive cross-sectional study was conducted on 182 graduate students in medical, nursing and laboratory sciences of Birjand University of Medical Sciences. Data were collected by questionnaire (αch:0.722) included demographic data and Specialized question based on participants' knowledge and preparedness. All data were analyzed by Kruskal-Wallis Test using SPSS v.24.

**Results:** 182 people including medical (40.4%), laboratory sciences (20.8%), nursing (22.5%) and dentistry (16%) students, participated in the study. 40.4% were male. Mean score of knowledge and preparedness of medical students was 45.5% and 63.2%, dental students were 41.3% ±6.5 and 66% ±12.5, students of laboratory sciences were 35.7% ±12.8 and 57.5%±11.6 and in nursing students were 36.3% ±6.5 and 61.5% ±7.5. The knowledge score between medical and laboratory sciences students was found to be significant (P = 0.003) as well as between the medical and nursing (P = 0.007).

**Conclusion:** Although all groups didn't achieve a good expected mark in these surveys. We got sure laboratory science and nursing student need to have a better schedule for learning bio-terrorism.

**Keywords:** Microbiology education, Bio-terrorism, Curriculum, Learning, Preparedness

# P822 - 816: IN VITRO EVALUATION OF ANTIFUNGAL EFFECTS OF SKIN OF ALLIUM CEPA AQUEOUS EXTRACT WITH AGAR WELL DIFFUSION METHOD AGAINST CANDIDA ALBICANS.

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**Background and Aim:** Candida albicans is a fast growing fungus that lead to candidiasis infections in animal and humans. On the other hand, ethnomedicinal plants are considered new resources for producing components that could treat fungal infections. The end of the recent study was to assess antifungal properties of skin of Allium cepa aqueous extract against common pathogen (C. albicans) with macrobroth dilution and agar well diffusion methods.

**Methods:** Agar well diffusion method was performed as screen test. Macrobroth dilution method was accomplished to determination of MIC value. C. albicans (ATCC 2091) was chosen to survey. Serial dilutions were prepared from aqueous extract in 1 (1 g/ml), 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8(0.125 g/ml), 1/16 (0.062 g/ml), and 1/32 (0.031 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar well diffusion method, in 1, 1/2, 1/4, 1/8, 1/16, and 1/32 dilutions, inhibitory zones were seen 27, 23, 23, 18, 16, and 14 mm in diameters for C. albicans. 1/16 and 1/4 dilution were realized for MIC and MFC about this fungus, respectively.

**Conclusion:** Based on the results, skin of Allium cepa aqueous extract has a fair antifungal effects on tested fungus as representatives of pathogenic fungus. Thus, Allium cepa can be used in the treatment of candidiasis infection in animal and humans. Additional in vivo researches and clinical trials would be needed to justify.

**Keywords:** Allium cepa, Aqueous extract, Antifungal effect

# P823 - 829: EVALUATION OF ANTIFUNGAL PROPERTIES OF AN ETHNO MEDICINAL PLANT

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**Background and Aim:** Ethno medicinal plants are considered recent resources for producing components that could treat fungal infections. The end of the new study was to evaluate antifungal properties of Lemon seeds aqueous extract against Candida albicans (C. albicans) with macrobroth dilution and agar well diffusion methods.

**Methods:** Agar well diffusion method was performed as screen test. Macrobroth dilution method was accomplished to determination of MIC value. C. albicans (ATCC 2091) was chosen to survey. Serial dilutions were prepared from aqueous extract in 1 (1 g/ml), 1/2 (0.5 g/ml), 1/4 (0.25 g/ml), 1/8(0.125 g/ml), 1/16 (0.062 g/ml), and 1/32 (0.031 g/ml) ratios in distilled water. Distilled water was used as negative control.

**Results:** In agar well diffusion method, in 1, 1/2, 1/4, 1/8 and 1/16 dilutions, inhibitory zones were seen 17, 14, 10, 9 and 8 mm in diameters for C. albicans. 1/16 and 1/4 dilution were realized for MIC and MFC about this fungus, respectively.

**Conclusion:** The results of this study indicate that aqueous extract of Lemon seeds inhibits and destroys C. albicans. Thus, the present research shows the antifungal properties of the ethno medical plant on C. albicans, suggesting to use as an antifungal agent. Extraction of active molecules will be the future work to peruse.

**Keywords:** Lemon seeds, Aqueous extract, Antifungal properties, Candida albicans

# P824 - 836: EXTRACELLULAR AMYLOID FIBRIL AFFECTING STAPHYLOCOCCUS AUREUS BIOFILM FORMATION IN VARIOUS ENVIRONMENTAL FACTORS

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**Background and Aim:** A biofilm is a collection of microbial communities enclosed by a matrix of extracellular polymeric substance (EPS) and separated by a network of open water channels. These communities adhere to manmade and natural surfaces, such as metals and teeth, typically at a liquid-solid interface. Staphylococci, including S. aureus, are known to form biofilms on various materials and surfaces. The abundance of amyloid-like material in environmental biofilms and the wide phylogenetic distribution of bacteria able to express these fascinating structures suggest that the amyloids play an important part in the lifestyle of many bacterial species. Recently reports demonstrated that phenol soluble modulins (PSMs) can polymerize to form fibrillar, amyloid structures that help stabilize S. aureus biofilms in vitro results in enzyme-resistant biofilms.

**Methods:** Here we choose the S. aureus ATCC 25923 as a widely used strain in biofilm formation to study about the PSM amyloid formation in some different environmental conditions. We test culture media, glucose amount, pH, and temperature.

**Results:** Results of spectrofluorimetry with thioflavin T (specific fluorescent color for amyloids) show that in Tryptic Soy Broth the amount of PSM amyloid is more than Peptone and LB broth, in range of 0-10% glucose the amount of amyloid in 6% glucose is maximum, also at alkaline pH about 8-9 and temperature about 37-40 PSM amyloid have maximum amount.

**Conclusion:** Results of quantification of biofilm in microtiter plates with crystal violet 0.1% show that wherever the amount of amyloid is high there are more biofilms.

**Keywords:** Biofilm, PSM amyloid, Staphylococcus aureus, Thioflavin T

# P825 - 847: STUDY AND CRITIQUE OF THE STANDARD OF MICROBIOLOGY IN ISO 11930: 2012 IN COSMETICS

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**Background and Aim:** Many of us use paraffin and hygiene products such as shampoos, fragrances and protective supplies to change the appearance and smell of our bodies. ISO standards assist in the evaluation of antimicrobial products. The use of cosmetics and cosmetics is as high as the global industry. It is essential to compare the same global guidelines for cosmetic and sanitary products that are valid throughout the world and can be used to compare the results of different laboratories.

**Methods:** In this article, we have tried to review the new standards of health care products using new books and articles.

**Results:** ISO 11930 evaluates the overall process of preservatives for cosmetic and sanitary products, including the test of the effect of preservatives and evaluation criteria. This standard shares the best practices of efficient companies around the world, reduces business barriers, and reassures consumers that products that they use are safe. ISO 11930 should be used in accordance with ISO 29621: 2010, Guidelines for risk assessment and microbial identification of low risk products.

**Conclusion:** This standard helps to diagnose microbial contamination in products. Standard ISO 11930: 2012, Cosmetic and Sanitary and microbiological products - Antimicrobial protection of cosmetics and hygiene products was developed by the Technical Committee ISO / TC 217, cosmetic and sanitary products.

**Keywords:** Standard, Microbiology, Cosmetic, ISO 11930: 2012

# P826 - 855: COMPARISON OF PROPOLIS AND FIVE CHEMICAL PRESERVATIVES ANTIBACTERIAL EFFECT AGAINST E. COLI PTCC1338

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**Background and Aim:** Nowadays preservatives are very popular because some of them are using in many products. However they have antibacterial effect, but they can also have many side effects, especially to human. So, using natural things like propolis is very safer. In this study we aimed to find antibacterial effects of propolis against E. coli PTCC1338 and comparison it's synergistic effects with five chemical preservatives.

**Methods:** Disk diffusion method used for determining the antibacterial effects of five different concentrations of propolis filtered solution and four different concentrations of five preservatives (Euxyle, Lonza zerv ID, Benzalkonium chloride, Benzyl alcohol, Saliguard). Their minimum inhibitory concentrations established in the absence of propolis and then propolis added to determine their synergistic effect.

**Results:** Escherichia coli has shown the highest and lowest resistance to Euxyle and Lonza zerv ID respectively. The results show that propolis has synergistic effect with all of preservatives has synergistic effects.

**Conclusion:** Results of this study revealed that propolis has proper antibacterial effects on E. coli PTCC1338, like five preservatives, and it can also improves the antibacterial effects of the lowest concentrations of preservatives. We propose that propolis use with lower concentrations of preservatives in products to decrease the side effects and increase or maintain the antibacterial effect.

**Keywords:** Propolis, E. coli PTCC1338, Preservative, Synergistic effect

# P827 - 863: EFFECT OF POLARIZED MESENCHYMAL STEM CELL CONDITIONED MEDIUM ON 4T1 CELL LINE

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**Background and Aim:** Mesenchymal stem cells (MSCs) represent a promising platform for cell and gene therapy of incurable cancers. MSCs bear a high potential in breast cancer therapy. MSCs can exhibit a marked tropism towards site of tumors. Many studies have reported that tumor progression and metastasis increase by MSCs. In contrast, other studies have shown that MSCs suppress growth of tumors. Object: The purpose of the present study is effect of polarized MSCs conditioned medium on 4T1 cell line.

**Methods:** MSC was isolated by flashing the Tibia and femur bones of mice and re-suspended in DMEM media, and kept in 5% CO2 incubator at 37◦C. After 14 days, MSCs were polarized for 1 hour with 10 ng/ml of LPS and 1µg/ml of poly (I:C) Then cells were washed and after 48 conditioned medium of cell culture flask were collected. 4T1 Cells were subcultured in 96-well plates at a density of 104 cells per well in a medium with isolated CM (50%) and FBS to allow attachment. After 72 h, perform MTT assay Spectrophotometric absorbance at 570 nm was measured.

**Results:** MTT assay test result suggest Compared to the untreated cells, treatment with 10 ng/ml of LPS showed a inhibition on 4T1 cell growth, while treatment with and 1µg/ml of Poly (I:C) showed a increases proliferation of breast cancer cells.

**Conclusion:** These results demonstrated that treatment MSCs whit LPS and poly (I:C) affects the growth of cancer cells. This may provide an opportunity to better define strategies for cell-based therapies to canser.

**Keywords:** Mesenchymal Stem Cells, polarization, Conditioned Medium, 4T1 Cells, MTT

# P828 - 870: ACTIVATED RAW 264.7 CELLS PROFILES IN RESPONSE TO TREATMENT WITH MELATONIN

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**Background and Aim:** Melatonin, the main product of the pineal gland has been attracting more and more attention because its anti-proliferative, proapoptotic, anti-angiogenic and immunomodulatory properties on the various cell types. Macrophages are terminally differentiated cells of the mononuclear phagocyte system that also can change their functional state in response to microenvironmental caused exhibiting a marked heterogeneity. Object: To evaluate metabolic activity of RAW 264.7 macrophage cells after treatment with melatonin.

**Methods:** RAW 264.7 vitality was determined by MTT assay. Briefly, Cells were seeded in triplicate at a concentration of 6×104 cells per well on a 48-well plate and treated with melatonin at concentrations of 0, 50, 75, 100, 150, 200 µmol/L. After 24 h, 25 µl MTT (5mg/ml) was added to each group and the cells were incubated for 4 h. Then 150 ml DMSO was added and shaken vigorously to dissolve formazan crystal. The optical density (OD) at 550 nm was measured using microplate reader. The experiments were performed in triplicate sets.

**Results:** Melatonin had suppressive effect on RAW 264.7 and this effect increase by raise of concentration; so, the maximum of inhibitory effect was observed in higher concentration.

**Conclusion:** These results suggest that melatonin may have a suppressive effect on vitality of in RAW 264.7 macrophage cells. Thus, melatonin might be a promising pharmacotherapy for diseases associated with overactivation of macrophages.

**Keywords:** Macrophages, Melatonin, MTT assays, Suppressive immune

# P829 - 904: EVALUATION OF LACTOBACILLUS GROWTH RATE AT DIFFERENT CONCENTRATIONS OF BILE IN MRS CULTURE ENVIRONMENT

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1. -

**Background and Aim:** Including lactic flora available in traditional cheeses are probiotic. Lactobacilli are among the most common probiotics that through the production of acid lactic acid and probiotic acid and attachment capability to the intestinal epithelial cells, prevents bacterial growth and leads to akeeping balance in the number of intestinal flora bacteria. Ideal probiotics have many features, including resistance to gastric acid bile, Gastric acid, bile urolithiasis, digestive enzymes and the coping ability to cope with causative agents.

**Methods:** The purpose of this study was to investigate, resistance level and acidophilus lactobacilli growth in a culture medium containing hundreds of different concentrations of biliary salts from 3% to 2. To do this, an MRS broth containing different concentrations of oxgal bean was used for culture and the optical absorption was measured after 3 h of incubation per hour and the growth pattern of bacteria was obtained in each environment. Which was compared with the logarithmic graph of bacterial growth.

**Results:** The results of optical absorption with spectrophotometer, for concentration of 0.3 and 0.5-0.8 of bile, showed a delay in growth of 15 and 20 to 30 minutes, respectively.

**Conclusion:** The results of optical absorption with spectrophotometer, for concentration of 0.3 and 0.5-0.8 of bile, showed a delay in growth of 15 and 20 to 30 minutes, respectively. But showed the delay at concentrations of 1, 1.5 and 2, in growth longer than 2 hours. So that the bacteria could at 2% concentration of bile salts survive and even grow.

**Keywords:** Lactobacilli, MRs, Bile

# P830 - 908: IN-VITRO SCREENING OF ANTHEMIS ALTISSIMA HYDRO-ALCOHOLIC EXTRACT ON TRICHOMONAS VAGINALIS

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**Background and Aim:** Trichomoniasis is one the most common STDs worldwide. This infection is caused by a flagellated protozoan, Trichomonas vaginalis. Metronidazole is the most prescribed drug for Trichomoniasis; But due to frequently reports of drug resistance, it's necessary to find an alternative.The present study was carried out to determine the effect of hydro alcoholic extract of Anthemis altissima on T. vaginalis.

**Methods:** Samples were obtained from the infected women who were referred to Razi Diagnostic Laboratory and urine sediments were cultured and passaged in a TYM medium for 10 days. Then axenic cultures of parasites were used for determining the effect of Anthemis altissima extract. Different concentrations (1.5, 3, 6, 12 and 24 mg/ml) of extract were tested on T. vaginalis trophozoites and screened in 24h and 48h. In addition, Metronidazole (50 µg/ml) effect was investigated as the drug control. Number of live and dead parasites were counted in each test by trypan blue staining and neubaur slide.

**Results:** Obtained information showed that hydro alcoholic extract of Anthemis altissima has an inhibitory effect on the growth of T. vaginalis trophozoites. The 24mg/ml concentration, showed 98% and 100% growth inhibition (GI) during 24 and 48 hours, respectively. IC50 (inhibitory concentration, 50%) of Anthemis altissima hydro alcoholic extract was 3.49 and 2.49 mg/ml after 24h and 48h.

**Conclusion:** Results of study indicate that hydro alcoholic extract of Anthemis altissima can be considered as an acceptable choice for the treatment of Trichomonas vaginalis.

**Keywords:** Trichomonas vaginalis, Anthemis altissima, Phytotherapy, hydro alcoholic extract, In Vitro

# P831 - 916: IMPROVEMENT OF CHLORHEXIDINE FUNCTION AS AN ANTISEPTIC AGENT USING NIGELLA SATIVA AS A NATURAL ADDITIVE SUBSTANCE

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**Background and Aim:** Antiseptic agents such as chlorhexidine are broadly used for the inhibition of bacterial infections. Due to the growing number of infection rate, it becomes crucial to develop more effective formulation of antiseptics. In this study, synergistic effects of Nigella sativa extract as a natural herbal additive in reducing the MIC of chlorhexidine in growth inhibition of Bacillus subtilis was investigated

**Methods:** Herbal extract was prepared using ultrasound assisted extraction. Antibacterial effect of Nigella sativa extract was evaluated by disc diffusion method at 25 and 50 mg/L concentrations. MIC of chlorhexidine alone and MIC of chlorhexidine with natural additive substance were determined using the broth dilution test. Chlorhexidine dilution series were inoculated with 200 µl of a standard suspension of bacteria (10 6 CFU/mL) and incubated at 37 ºC for 24 h.

**Results:** The inhibition zone for Nigella sativa was determined 9mm against Bacillus subtilis compared to vancomycin (30µg/mL). Chlorhexidine in 0.6-100mg/L concentrations and extract of Nigella sativa in 5,10,20,40 µg/L concentrations were used for estimating of the MIC for Bacillus subtilis. The MIC of chlorhexidine was 1.25mg/l. Nigella sativa, an additive substance reduced the MIC value of Chlorhexidine against Bacillus subtilis down to 0.6mg/L.

**Conclusion:** Antibacterial properties of Nigella sativa has been reported before and in this study herbal extract of Nigella sativa revealed antibacterial synergism with chlorhexidine. This finding suggests that augmentation of the antiseptics containing chlorhexidine would enhance their efficacy. No toxicant effect on sensitive human skin is reported for Nigella sativa extract.

**Keywords:** Antiseptic, chlorhexidine, Nigella sativa, MIC

# P832 - 955: FREQUENCY OF VARIOUS CANDIDA SPECIES ISOLATED FROM VAGINAL SAMPLES AND COMPARISON OF BIOCHEMICAL AND MOLECULAR RESULTS

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**Background and Aim:** A common fungal infections are Vulvovaginal candidiasis infections in women. In most cases the disease is caused by the increasing number of candidates that there is as normal flora in the vagina. Several species of the genus Candida including C. albicans, Parapsilosis, Tropicalis, C. Glabrata, Cruise, Dubliniensis and Guilliermondii involved in the development of the disease but Candida albicans is the cause of most cases of the disease.

**Methods:** One hundred patients with suspected vulvovaginal candidiasis by two sterile swabs were collected. One of the swabs for direct test and another to grow on the SABOURAUD dextrose agar medium with chloramphenicol was used. Yeast colonies grown were studied by preparing tizmant. In order to identify the different species of the genus Candida, replant on the CHROM agar Candida, germ tube test, production test, chlamydospore and biochemical tests were performed. After identification of Candida species by above method, isolates for pcr and sequencing were examined.

**Results:** From one hundred samples, 42 samples were Candida yeast That from different species of the genus Candida, Candida albicans by 6/78 the highest frequency and C. glabrata and Candida cruise in the amount of 3/14 percent and 1/7 percent assigned lower proportions of isolates, respectively. Results of abundance and various species of Candida isolation of suspected cases of Vulvovaginal candidiasis biochemical and molecular methods were similar.

**Conclusion:** Candida albicans is the cause of most cases of vulvovaginal candidiasis, but by given the widespread use of antifungal agent's frequencies of other Candida species in the disease has increased significant.

**Keywords:** Vulvovaginal, Candidates, Molecular, Biochemical

# P833 - 977: THE STATISTICAL ANALYSIS OF RELATIONSHIP BETWEEN THE ABUNDANCE OF PHYLOGENETIC GROUPS AND SOME PHENOTYPIC VIRULENCE FACTORS OF UROPHATOGENIC ESCHERICHIA COLI (UPEC)

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**Background and Aim:** Escherichia coli is involved in urinary tract infections (UTIs); it's strains generally fall into one of four phylogenetic groups A, B1, B2, and D and that virulent extra strains belong mainly to group B2 and, to a lesser extent, to group D. Uropathogenic E.coli show different virulence factors too.

**Methods:** One hundred thirty eight E.coli strains were used, were isolated from cases of (UTI). The presence of the virulence factors; hemolysin, hemagglutination and cell surface hydrophobicity was analyzed and then Investigated of Phylogenetic Groups distribution with PCR. Finally, the relationship between the frequency of the findings with the Chi square test and the use of spss software version 16 were analyzed.

**Results:** 45 (32.4%) strains were positive hemagglutination, 116(84%) were positive hemolysis and results of cell surface hydrophobicity test were 45(32.6%) positive. also more than half of isolates (44.3%) are Resistance to 2 or more drugs used in this research. 16(12%), 76(55%), 29 (21%) and 17 (12%) strains were related to B1, B2, D and A phylogenetic groups respectively. it was determined that most of the isolates belonging to each of the above mentioned factors were in the phylogenetic group B2 but, however, the difference in the virulence factors in the phylogenetic groups was not statistically significant ($P \geq 0.05$).

**Conclusion:** Although in some studies, more virulence were observed in the B2 phylogenetic group and indicating that most isolates of virulence factors or resistant to antibiotics belong to the group B2 But in our study, these differences were not significant.

**Keywords:** Escherichia coli, phylogenetic groups

# P834 - 1052: POLYMORPHISM ANALYSIS OF THE OMEGA- CLASS GLUTATHION S TRANSFERASE IN PATIENTS WITH CERVICAL CANCER

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**Background and Aim:** Cervical cancer is one of the most prevalent cause of death among women which leads to approximately 270000 death annually.It is confirmed that, the resistance infection with different high-risk types of human papilloma virus (HPV), specifically HPV 16 and 18, causes cervical intraneoplasia (CIN) and cervical cancer.Generally, 85% of global burden is in developing countries.Different occurrence of HPV at various regions of the world demonstrates that although HPV is the main cause of cervical cancer, other environmental and genetic factors such as genetic polymorphism can affect this disease occurrence.Human cytosolic Glutathione-S-transferase super family is an antitoxic enzymatic superfamily that, catalyze the conjugation of glutathione to wide different endogenous and exogenous compounds.and contribute in many important cellular reactions.Glutathione-S- transferase omega class (GSTO) belongs to one of the old class of GST enzyme super-family.many studies were showed that, SNPs of GSTOs plays an important role in cancer progresses.

**Methods:** Genomic DNA extraction was done by using High pure PCR template preparation kite and the extraction procedure was exactly followed manufacturer's instruction. GSTO gens were amplified with polymerase chain reaction (PCR) method. Restricting enzymes were used for PCR-RFLF method. Afterwards, Electrophoresis was performed to detect PCR-RFLP productions.

**Results:** Genotypes and allele frequency results for GSTOs are summarized as below: GSTO1 CIN/ Cervical cancer patients Healthy controls (HPV +) Patients GSTO2 CIN/ Cervical Cancer patients Healthy controls (HPV +) Patients AA 44 (88%) 28 (65%) 43(100%) NN 24 (48%) 20 (46.5%) 14(32.5%) AD 6 (12%) 15 (35%) 0 ND 25 (50%) 20 (46.5%) 20(46.5%) DD 0 0 0 DD 1 (2%) 3 (7%) 9(21%) Total (Genotype) 50 43 43 Total (Genotype) 50 43 43 AD/DD 0 0 0 ND/DD 26 (52%) 23 (53%) 29(67.5%) A allele .94 .825 1 N allele .73 .697 .557 D allele .06 .175 0 D allele .27 .303 .443 Combination CIN/Cervical cancer patients Healthy controls (HPV+) Patients 140AA/142NN 20 (40%) 12 (28%) 14(32.5%) 140AA/142ND 23 (46%) 14 (32.5%) 20(46.5%) 140AA/142DD 1 (2%) 2 (4.6%) 9(21%) 140AD/142NN 4 (8%) 8 (18.6%) 0 140AD/142ND 2 (4%) 6 (14%) 0 140AD/142DD 0 1 (2.3%) 0 Total (Genotype) 50 43 43

**Conclusion: -**

**Keywords:** Omega, class glutathion S transferase, polymorphism, cervical cancer

# P835 - 1139: ISOLATION OF GENES AT THE MOLECULAR EXOS, LASB, TOXA, ALGD PSEUDOMONAS AERUGINOSA ISOLATES FROM HUMAN BY MULTIPLEX PCR

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**Background and Aim:** Pseudomonas aeruginosa is a reasons for 10-15 % of hospitalized infections especially in infants and patients with immune deficiency disease. The infections are very sever and causes a high mortality rate. It also has a high resistance to antibiotics due to reduced permeability of the drug and the production of chromosomal enzymes. The presence of pathogenic genes is one of the most important part of its invasive mechanisms. The aim of this study was to investigate the simultaneous prevalence of exoS, lasB, toxA, algD genes taken from human samples using Multiplex PCR and its Antibiotic resistance.

**Methods:** For the extraction of the reference and collected strains, the DNA extraction kit produced by MBST was used. 60 samples of human samples were collected. After differential and diagnostic tests on the samples, the M-PCR method was used to trace the desired genes. The data were analyzed by SPSS software and the frequency of the mentioned genes was determined. An antibiotic susceptibility test was performed using Agar Disc Diffusion test , Muller-Hinton Agar mediums and Mcfarland Suspension.

**Results:** The M-PCR result showed that the amount of exoS,lasB, toxA,algD was 6/6%,61/6%,60%,43/3% respectively.The lasB, toxA genes were the most frequent.

**Conclusion:** The antibiotic study, indicated that the highest resistance to Amikacin and Amoxicillin was 100% and the highest sensitivity to Ciprofloxacin was 88/3%.

**Keywords:** Pseudomonas aeruginosa, Multiplex PCR, Ciprofloxacin, Pathogenic genes

# P836 - 1153: A COMPARATIVE STUDY ON ANTIOXIDANT POTENTIALITY OF CULTIVATED AND WILD STRAINS OF BUTTON MUSHROOMS, AGARICUS SPP.

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**Background and Aim:** While the cultivated button mushroom, Agaricus bisporus, is the most commonly grown mushroom in the world and Iran as well, very little is known about antioxidant properties of Iranian wild mushrooms. Therefore, the current study sought to address differences in the antioxidant capacity among a number of cultivated and wild Agaricus spp., including 5 cultivated and 5 wild strains of A. bisporus and 2 wild strains of A. gennadii and A. devoniensis.

**Methods:** All the wild strains were collected from regions of North-eastern Iran, followed by molecular authentication using Internal Transcribed Spacer sequence analysis. Methanolic extracts from the tested mushrooms were subjected to chemical and biochemical measurements of antioxidant activities.

**Results:** Both strains demonstrated DPPH scavenging activities higher than 90% at 10 mg/mL, even though wild isolates 1 and 4 of A. bisporus showed remarkable scavenging activities at concentrations as low as 3 mg/mL compared to the rest ($p < 0.05$). Furthermore, wild isolate 4 and cultivated strain U1 of A. bisporus exhibited the highest and lowest values for phenolic contents at 9.6 and 3.5 (mg GAEs/g dry weight), respectively. Among the tested mushrooms, the wild strain of A. devoniensis proved to apparently possess high levels of reducing power as well as chelating ability. In conclusion, wild A. devoniensis and a wild isolate of A. bisporus (isolate 4) ranked the first for having the highest antioxidant capacity compared to the rest ($p < 0.05$).

**Conclusion:** These wild mushrooms could be considered as natural sources for the production of antioxidant bioactive compounds.

**Keywords:** Antioxidant activity, wild mushrooms, Agaricus devoniensis, Agaricus gennadii, Agaricus bisporus, cultivated strains

# P837 - 1161: UROGENITAL INFECTIONS AND HUMAN INFERTILITY: AN OVERVIEW

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**Background and Aim:** Infertility is one of the significant clinical problems of today's human populations, and affects considerable percentage of couples worldwide, with an estimated prevalence of about 30% in some regions. In addition to genetic and physiological disorders of female and male reproductive systems, infectious agents are also a significant part of the causes of infertility in couples. The purpose of this study was to review the literatures regarding the negative impact of infections on female and male fertility.

**Methods:** The study was performed using articles recently published in high quality journals.

**Results:**According to the review of articles, various infectious agents including viruses (such as human herpesvirus 6, Zika virus, human papillomavirus, herpes simplex virus, human immunodeficiency virus, human cytomegalovirus, Hepatitis B virus, Hepatitis C virus), bacteria (such as Chlamydia trachomatis¬, Neisseria gonorrhoeae,¬ Mycoplasma spp.,¬ Ureaplasma spp.,¬ Treponema pallidum) and protozoa (such as Trichomonas vaginalis) can cause mostly asymptomatic infection in the urogenital tracts, and subsequently reduced fertility or infertility in couples.

**Conclusion:** Particular attention to the role of infectious agents such as viruses and bacteria in infertility and more studies in this area can be effective in understanding the causes of infertility as well as treatment of infertility in a significant proportion of infertile couples.

**Keywords:** Urogenital infections, infertility, viruses, bacteria

**The Emerging Infectious Diseases**

## P838 - 12: PREVALENCE OF FIM H GENE IN UROPATHOGENIC E. COLI PRODUCING AND NON PRODUCING BIOFILM ISOLATED FROM DIABETIC PATIENTS IN SHAHREKORD, IRAN.

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**Background and Aim:** Urinary tract infection (UTI) is one of the most common hospital infections resulted from uropathogenic Ecoli colonization in host musocal epithellium and damages to host tissue. The ability to producing biofilm, play an important role in virulence of the bacteria.

**Methods:** In these research 51 Ecoli isolates of diabetic patients having UTI symptoms collected and approved using biochemical and molecular testes. Evaluation of biofilm formation was assessed using microtiter plate test. The polymerase chain reaction (PCR) with using specific primers were used to detection of fim H gene.

**Results:** Among 51 E. coli isolates, 46 (90.16%) were able to produce biofilm. Strorng, medium and weak biofilm reaction, reported 19.6%, 23.52% and 49% respectively. The frequency of fimH gene in isolates with strong, medium and weak biofilm reaction, reported 90%, 80, 80 and 10%.

**Conclusion:** The findings indicate that fim H gene is the most important factor in uropathogenic E. coli for biofilm producion. In the statistical analysis by fisher exact test between the strong biofilm reaction and fim H gene was observed significant correlation.

**Keywords:** Biofilm, Diabetic patients, E. coli, Urinary Tract Infection, fim H

# P839 - 13: PREVALENCE OF O SEROGROUP IN UROPATHOGENIC E. COLI ISOLATED FROM DIABETIC PATIENTS IN SHAHREKORD

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**Background and Aim:** Multiple serogroups of E. coli, such as O1, O2, O4, O6, O7, O8, O15, O16, O18, O21, O22, O25, O75 and O83 is the cause of the high percentage of urinary tract infection. Uropathogenic Ecoli colonization in host musocal epithellium and damages to host tissue. The ability to constitute biofilm plays an important role in virulence of the bacteria.

**Methods:** In this research 51 Ecoli isolations of diabetic patients having UTI symptoms collected and approved using biochemical tests and molecular technique.To identify common serogroups of uropathogenic Ecoli polymerase chain reaction (PCR) done using specific primers.

**Results:** Among 51 Ecoli isolates the highest frequency related to serogroup O25 (31.37%) and the lowest serogroup related to O75 and O83 (1.96%).Prevalence of O16, O5, O21 serogroup reported 11.76%, 9.8%, 7.84%. O7, O8, O22 and O2 reported 5.88%.

**Conclusion:** E. coli serogroups frequency of urinary tract infections is similar to non-diabetic patients.

**Keywords:** Diabetic pateiants, Serogroup, Uropathogenic Ecoli

# P840 - 24: INVESTIGATION OF POLYMORPHISM AND MUTATION IN THE EXON1 REGION OF MBL2 GENE AT PATIENTS WITH COPD

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**Background and Aim:** Obstructive pulmonary disease (COPD) is characterized by chronic airway limitation. The most common causes of COPD are smoking and respiratory infections. Mannose-binding lectin (MBL) belongs to the family of collectins and plays a role in the complement activation of the innate immunity through the lectin pathway.

**Methods:** In this study, following DNA extraction in 59 patients with COPD, PCR was used to amplify the exon 1 of MBL2 gene. The PCR products were later sequenced and BLAST search was performed on them. The results were analyzed using SPSS

**Results:** The results of nonparametric statistics showed that there was a significant relationship only between nucleotides 304 deletion mutation (T) of the gene MBL2 exon 1 and there was not a significant correlation between the response to treatment and remaining polymorphisms and mutations and in the studied subjects.

**Conclusion:** It was revealed that the deletion mutation at nucleotide 303 (deleted T) of Mbl2 gene exon 1 accelerates the response to treatment in patients with COPD and other polymorphisms and mutations were not effective in this regard.

**Keywords:** Mannose binding lectin (MBL), chronic obstructive pulmonary disease (COPD), polymerase chain reaction (PCR), polymorphism

# P841 - 57: PULMONARY MYCOBACTERIUM SIMIAE INFECTION IN AN IRANIAN REGIONAL CENTERS FOR TUBERCULOSIS

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**Background and Aim:** Mycobacterium simiae infection is one of the most common causes of nontuberculous mycobacterial (NTM) lung disease in world. M. simiae is the only niacin-positive NTM, and may be easily confused with M. tuberculosis. Till now, little is known about its prevalence in Iran.

**Methods:** This study involved all suspected tuberculosis (TB) patients presenting to our TB center from 2015 to 2016, with confirmation of M. simiae pulmonary infection. For all patients, conventional and molecular methods (PRA and sequencing) were performed.

**Results:** In total, 19 cases of M. simiae were identified in our center. All patients with positive M. simiae cultures met American Thoracic Society diagnostic criteria for NTM disease.

**Conclusion:** M. simiae may present with clinical and radiological manifestations consistent with TB. thus, isolation of M. simiae, is a serious public health problem and merit further attention by health authorities.

**Keywords:** nontuberculous mycobacterial, Mycobacterium simiae, Iran

# P842 - 101: INVESTIGATING EFFECTIVENESS OF CAMELLIA SINENSIS AQUEOUS EXTRACT ON ACANTHAMOEBA CYSTS

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**Background and Aim:** Acanthamoeba is a resistant protozoon and is causing of sever disease such as Granulomatous Amoebic Encephalitis (GAE) and Chronic Amoebic keratitis (CAK). The drugs are not effectiveness on the parasite so, searching to find alternative drugs continues. In the recent years, the impact of the aqueous extract of Camellia sinensis (tea) on the health is taken into consideration. The aim of this study was evaluated effectiveness of this extract of Camellia sinensis (tea) on Acanthamoeba. Also, comparing the mortality of cysts were exposed to green and black tea.

**Methods:** Clinical isolate of Acanthamoeba was cultured on non-nutrient agar plates. The black and green tea extract were prepared by maceration method and dried by rotary evaporator and stored at 4˚C. The effect of three different concentrations of Camellia sinensis were evaluated on the parasite and compare with controls.

**Results:** The black and green tea extracts have lethal effects on Acanthamoeba cysts and the effectiveness were more than controls and a current anti-keratitis drug. Also, the effectiveness of tea extracts were time and dose dependent ($p<0.0001$). There were no significant differences between effectiveness of black and green tea ($p>0.05$).

**Conclusion:** The tea extract has potential to inhibit of Acanthamoeba parasite but using it requires further studies.

**Keywords:** Acanthamoeba, Camellia sinensis, Black tea, Green tea, Complementary therapy, Traditional medicine

# P843 - 119: SURVEY OF HUMAN PAPILLOMAVIRUS INFECTION RATE IN PATIENTS WITH ESOPHAGEAL CANCER IN IRAN: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background and Aim:** Esophageal squamous cell carcinoma (ESCC) is usually diagnosed when invasive tumor have developed. Human papillomavirus (HPV) can infect the epithelium of the esophagus. The aim of this study was to evaluate the prevalence of HPV in Iranian ESCC.

**Methods:** In this study, 78 relevant articles published from 2002 to 2016 were reviewed. Articles were indexed in databases such as PubMed, Science Direct, Google Scholar, web of knowledge and IranMedex. Prevalence of HPV in ESCC according to different regions of Iran, years of study and HPV genotypes were surveyed. Data were entered into the excel data sheet and analyzed with random effects models using Meta R software 2.13.

**Results:** From 78 articles, 15 were included in the study with total 1252 sample size. Total prevalence of HPV-16 and HPV-18 was 0.068% (CI; 0.03- 0.11) and 0.036% (CI; 0.02- 0.06), respectively. Prevalence of HPV-16 and HPV-18 was decreasing according to years ($p<0.05$), and was increasing with age ($p<0.05$) difference was significant in regions of Iran ($p<0.05$). The highest and lowest occurrence of HPV-16 according to year of study was 65.60%, in 2007 and 0%, in 2004 (Tehran). Highest and lowest occurrence of HPV-18 was 30.30% in Tehran (2007) and 0% in east province of Iran (2003).

**Conclusion:** Human Papilomavirus were observed in ESCC tissues from different regions of Iran. With respect to defined oncogenic role of HPV, so more studies with different method and in other population is necessary.

**Keywords:** Human Papillomavirus, Esophageal, Cancer, Iran, Squamous, Carcinoma

# P844 - 216: EPIDEMIOLOGY OF LEPROSY IN NORTH OF IRAN DURING 15 YEARS

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**Background and Aim:** Leprosy is an old disease which is somehow forgotten in the world. The onset of leprosy is insidious so cause late diagnosis and distribution of disease. It is necessary to evaluate the disease in high risk area and obtained enough information to reinforce effective controlling measures.

**Methods:** In this study every patient who were referred to health service for leprosy and any one with symptoms and signs of leprosy were examined in past 15(1380/- 1395) years in Khorasan. Data of these newly identified cases were analyzed.

**Results:** Forty two new cases were identified during this period, 28 patients have Iranian nationality and 14 patients were afghani. All patients were older than 15 years old. Among these patients 26.2% were female and 73.8% were male. According to WHO protocol 36 patients were multibacillar form (85.7%). Among this patient 4, 14 and 4 persons had grad 0, 1 and 2 disability respectively.

**Conclusion:** Iran with 0.02 cases per 10000 populations is at elimination phase but recognition of new cases in our region emphasis ongoing surveillance and effective policy, these diagnosed patients in Khorasan show good observation for the disease.

**Keywords:** Leprosy, Epidemiology, Iran

# P845 - 258: PREVALENCE OF CRYPTOSPORIDIUM PARVUM INFECTION AMONG 1-10 YEAR-OLD CHILDREN IN ARDABIL, IRAN

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**Background and Aim:** Cryptosporidium parvum is a zoonotic protozoan that leads to gastro-entritis among infected individuals. This sporozoan is prevalent throughout the world and is one of the most important microbial causes of lethal and infectious diarrhea among children. The aim of this study was to examine the prevalence of Cryptosporidium parvum infection among 1-10 year-old children in Ardabil (northwest of Iran).

**Methods:** In this descriptive study, stools of 377 randomly selected 1-10 year- old children were collected (between August 2016 and November 2016). Stool exam, sucrose floatation, detergent-formalin sedimentation and modified ziehl-neelsen methods were performed to detect the infection of C. parvum.

**Results:** From 377 studied children, 5 kids (3 boy & 2 girl) were infected (1.32%). All the infected children belonged to 1-5 year-old group. There was no significant association between gender and the infection (sig. = 0.084, $p<0.05$), whereas the relationship between cryptosporidiosis and age of infection was significant (sig. = 0.000, $p<0.05$).

**Conclusion:** As the results of this study, we concluded that the infection of Cryptosporidium parvum is prevalent among 1-5 year-old children of Ardabil. We also concluded that sucrose floatation and modified ziehl-neelsen are the best methods for diagnosis of Cryptosporidium parvum infection.

**Keywords:** Prevalence, Cryptosporidium parvum, Infection, Children, Ardabil

# P846 - 328: ANALYSIS OF IL-6 GENE POLYMORPHISMS IN PATIENTS WITH BRUCELLOSIS: A CASE CONTROL STUDY

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**Background and Aim:** It seems that polymorphism in the regulatory areas of cytokine genes affects the cytokine production capacity and may play a role in the development of infectious diseases. Interleukin-6 (IL-6), which is cytokine of Th2, cause the macrophage become inactive and patient conditions get worse.

**Methods:** In this case-control study, 60 patients with brucellosis and 60 healthy participants were recruited. IL-6 genotyping at position -174 (G/C) was analyzed by restriction fragment length polymorphism-polymerase chain reaction (RFLP-PCR) method.

**Results:** There was no significant difference between the patients and controls regarding IL-6 (-174 G/C) polymorphisms. Analysis of alleles frequency of IL-6 (-174) revealed no statistically significant differences between patients and controls.

**Conclusion:** Our study showed that showed no association between genotypes of IL-6 polymorphisms and susceptibility to brucellosis. More inspections of this polymorphism and the ability to produce IL-6 in the population with brucellosis are recommended.

**Keywords:** IL-6 gene, Polymorphism, brucellosis, case control

# P847 - 407: ANTIFUNGAL ALKALOIDS FROM THE AERIAL PARTS OF GLAUCIUM CORNICULATUM AGAINST CANDIDA ALBICANS

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**Background and Aim:** Candida species are responsible for a multiplicity of infections in humans ranging from minor superficial infections to life-threatening candidemia. The Emerge of resistance of Candida species to current antifungal drugs including itraconazole (ITC) as well as the appearance of adverse consequence of certain anti-fungal agents are universal crisis. Therefore it is crucial to investigate for more promising and less-toxic novel antifungal agents that could overcome these drawbacks. Plant-derived natural products or their derivatives may offer potential leads which could inhibit on this pathogenic yeast.In a project for discovery of new antifungal compounds from Iranian plants 68 extracts from Papaveraceae, Lamiaceae, Boraginaceae, Apiaceae, and Asteraceae were screened against Candida albicans ATCC10231.

**Methods:** Screening was achieved by using the dot-blot direct bioautography method, which is very convenient and effective.

**Results:**In preliminary screening experiment using TLC bioautography the most active was a methanolic extract from aerial parts of Glaucium corniculatum at 100 ?g/spot. The active extract prepared based on alkaloids enrichment protocol and crude alkaloid fraction was tested and showed significant inhibition against C. Albicans at 25 ?g/spot. The activity of extract was localized by a combination of HPLC/ TLC bioautography assay.

**Conclusion:** The large scale isolation and purification of active compounds in alkaloid rich fraction by combination of revers and normal phase chromatography resulted on identification of several alkaloids. Their structures were established by extensive spectroscopic methods, including 1D (1H NMR) and 2D-NMR (COSY, HSQC, and HMBC).

**Keywords:** Candida albicans, Antifungal compounds, TLC bioautography assay

# P848 - 418: NOCARDIA CYRIACIGEORGICA ISOLATION AND DIAGNOSIS IN PATIENT WITH BRAIN ABSCESS

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**Background and Aim:** Nocardia are gram positive partially acid-fast bacilli capable of inducing wide range of infections in immunodeficiency, AIDS, cancer, Lupus Erythematosus and diabetic patients. Nocardia cyriacigeorgica was first isolated from a chronic Bronchitis patient. In recent reports have been published on its clinical importance in patients with chronic Bronchitis, brain abscess and lung diseases. Patient: The studied patient is a 73 year-old woman admitted to the hospital due to severe headaches and shortness of breath. The patient also suffered from diabetic foot ulcer. Among the clinical symptoms of the patient, fever, weakness and drowsiness and vomiting could be mentioned. Regarding the head CT scan results, brain abscess was diagnosed and three surgeries were carried out in two years.

**Methods:** The sample was stained and cultured. After 24 hours, the colonies did not have proper growth, but after 48 h, chalky and white colonies with soil smell were observed in blood agar medium.

**Results:** In this study, Nocardia cyriacigeorgica was diagnosed by phenotype and molecular tests.

**Conclusion:** Based on the recent cases and increase of Nocardia pathogenic roles, hospitals should conIn this study, Nocardia cyriacigeorgica was diagnosed by phenotype and molecular testssider clinical tests and take necessary actions in their microbiological agenda for detecting these bacteria. Identification of these factors require an expert department with Nocardia detection techniques and spending time and care which can't be fulfilled in ordinary clinical labs of the hospitals due to huge amount of samples.

**Keywords:** Brain abscess, diabetic foot ulcer, Nocardia cyriacigeorgica

# P849 - 449: PREVALENCE OF ONYCHOMYCOSIS DUE TO NON-DERMATOPHYTE MOLDS IN TEHRAN

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**Background and Aim:** Onychomycosis is one of the most common fungal infections. It causes by dermatophytes, yeasts and non-dermatophyte moulds. The number of cases of nondermatophytic onychomycosis has greatly increased.

**Methods:** In the 1 year period from September 2014 to September 2015 180 patients with onychomycosis were studied. These patients were referred to school of public health, Tehran University of Medical Science. All nail specimens were analyzed by direct microscopy and culture on Sabouraud's Dextrose agar with and without cycloheximide.

**Results:** Onychomycosis due to Nondermatophytic mould were 33%. Aspergillus spp. were the most common etiologic agents of nondermatophytic onychomycosis (73.79%). Other causative agents were Penicillium spp. (12.82%), Fusarium spp (10.26%), Scopulariopsis brevicaulis and Chrysosporium spp. (each 2.56%).

**Conclusion:** Due to the increase in onychomycosis due to NDM, we suggest the need of a careful mycological examination in patients with onychomycosis.

**Keywords:** Molds, Onychomycosis, NDM, Iran

# P850 - 453: PREVALENCE OF ONYCHOMYCOSIS DUE TO DERMATOPHYTE AGENTS AMONG PATIENTS REFERRED TO MYCOLOGY LABORATORY OF SCHOOL OF PUBLIC HEALTH, TEHRAN UNIVERSITY OF MEDICAL SCIENCE

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**Background and Aim:** Onychomycosis or fungal nail infection is one of the most common fungal infections that is increasingly prevalent. It caused by dermatophytes, yeasts and non-dermatophyte moulds.

**Methods:** In the present study, 180 patients suspected to onychomycosis were evaluated by direct Microscopy using KOH 20% and cultures methods onto Mycosel agar and sabouraud dextrose agar media for identifying the causative fungi of onychomycosis.

**Results:** From 180 referred patients, 118 (65.56%) had onychomycosis. from 118 patients with onychomycosis, 79 (66.9%) was positive for infection with dermatophytes. The highest and lowest frequency of tinea ungium were found in 70-61 age and above 90 years old group, respectively.In forty and seven patients (59.49%) dermatophyte fungi was isolated from the distal of nails. T. rubrum and T. mentagrophytes were the most common agent of onychomycosis.

**Conclusion:** This study has demonstrated that T. rubrum was the most common dermatophyte agent of onychomycosis.

**Keywords:** Nails, Onychomycosis, Dermatophytes

# P851 - 477: OROPHARYNGEAL COLONIZATION OF HIV-INFECTED DUE TO NON –ALBICANS CANDIDA (NAC) SPP. IN KERMAN, IRAN

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**Background and Aim:** In human immunodeficiency virus (HIV)-infected patients, oropharyngeal colonization by Candida pathogens predicts subsequent development of yeast infections which may lead to systemic candidemia, a recognized major cause of mortality. Changes in the clinical severity of candidiasis and the Candida species prevalence profile may be a reflection of immunological changes in HIV positive patients. The aim of this study was to determine the prevalence of non- albcans candida (NAC) spp. in oral cavity of HIV-infected patients in Kerman, Iran.

**Methods:** Oropharyngeal candidiasis samples were collected from 80 seropositive HIV patients and identified by using culturing on CHROM agar™ Candida and PCR -RFLP with the restriction enzyme MspI.

**Results:** NAC spp. were detected in 24/80 (30%) HIV-infected individuals. In HIV infected individuals, commonly isolated NAC spp. were Candida glabrata 19(23.75%), C. parapsilosis 4 (5%) and C. kefyr (1.25%).

**Conclusion:** Strong clinical suspicion along with optimal sampling of an accurate diagnosis of Candida species involved would go a long way in decreasing the morbidity associated with non-albicans Candida species.

**Keywords:** Oropharyngeal, HIV-Infected , Non –albicans Candida (NAC) spp. , Iran

# P852 - 496: PREVALENCE OF CANDIDA ALBICANS IN HIV /AIDS PATIENTS AND HIV-FREE SUBJECTS IN KERMAN, IRAN

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**Background and Aim:** Candida species are common opportunistic pathogen AIDS patients and HIV-free subjects. Aim of this study was to identify the oral carriage of C. albicans in patients infected by human immunodeficiency virus (HIV) and HIV-free subjects.

**Methods:** In this study, mucosal swab samples collected from 116 HIV /AIDS patients and HIV-free subjects in Kerman, Iran. C. albicans were identified by using culturing on Sabouraud's dextrose agar with choramphenicol, and CHROM agar™ Candida and PCR -RFLP with the restriction enzyme MspI.

**Results:** The results of this study demonstrated that C. albicans were present in 50% of the all samples, and was isolated from 60 % HIV /AIDS patients and 33.3% HIV-free subjects. Oral carriage of C. albicans species in patients with HIV is higher than HIV-free subjects.

**Conclusion:** C. albicans is predominant isolated yeast in buccal cavity of patients infected by human immunodeficiency virus (HIV) and healthy person.

**Keywords:** Candida albicans, HIV /AIDS , HIV-free subjects , Iran

# P853 - 499: HIGH PREVALENCE OF CANDIDA KRUSEI IN HIV-FREE SUBJECTS

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**Background and Aim:** Although C. albicans is the most common human yeast pathogen, but other Candida species such as C. krusei are now recognized as emerging agents. C. krusei is inherently resistant to the widely used triazole antifungal fluconazole and poses therapeutic problems, especially in systemic candidiasis.

**Methods:** In this study, oral swab sampling obtained from 36 HIV-free subjects (without signs in mouth) in a Kerman, Iran were studied by culturing on CHROM agar™ Candida and PCR - RFLP with the restriction enzyme MspI.

**Results:** The result showed that the rate of oral carriage of C. krusei increased significantly and was 66.66%.

**Conclusion:** In present study, interestingly, a greater prevalence of C. krusei than C. albicans species was found in HIV-free subjects (66.66% versus 33.33%).

**Keywords:** Candida krusei, HIV-free subjects, PCR -RFLP

# P854 - 545: ISOLATION AND IDENTIFICATION OF NOCARDIA CYRIACIGEORGICA FROM BRAIN ABSCESS

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**Background and Aim:** Nocardia are branching, aerobic gram positive and partially acid fast bacteria that is a member of the family Nocardiaceae. This bacteria can cause respiratory, cutaneous or neurological infections in both of immunocompromised and immunocompetent patients. In this current study we report a Nocardia brain abscess caused by Nocardia cyriacigeorgica in Isfahan Iran.

**Methods:** A 20-year-old man with no previous history was referred to Al-Zahra hospital; he showed symptoms such as: headache, weakness, drowsiness and urinary incontinence. Based on CT scan images, brain abscess was diagnosed and the patient had two surgeries during 2 months.

**Results:** Bacteria was isolated from the patient's brain abscess. According to microscopic examination, and after culture, biochemical characteristics and 16S rRNA gene sequence analysis; the isolated strain was identified as Nocardia cyriacigeorgica. And according to the antibiogram pattern; co-trimoxazole, Amikacin and Linezolid was prescribed for the patient.

**Conclusion:** Nocardial brain abscess can be seen in both of immunocompromised and immunocompetent patients; hence, if it not be diagnosed and the appropriate treatment not be described could lead to a high mortality rate. Considering this case and increasing role of Nocardias in causing infections, it is appropriate that clinical labs consider some approaches and measures to identify this bacteria in their microbiologic guidelines. Identifying these agents needs a specific section in the lab that provides the facilities to use necessary techniques to identify Nocardias.

**Keywords:** Brain abscess, 16S rRNA, Nocardia Cyriacigeorgica

# P855 - 587: STUDY OF BACTERIAL STRAINS WERE ISOLATED IN PATIENTS WITH DIABETIC PATIENTS

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**Background and Aim:** In general, infectious diseases are more frequent and/or serious in patients with diabetes mellitus, which potentially increases their mortality. The greater frequency of infections in diabetic patients is caused by the hyperglycemic environment that favors immune dysfunction, neuropathy, decrease in the antibacterial activity of urine, and greater number of medical interventions in these patients.

**Methods:** Over a period of 9 months in three seasons, 65 patients with diabetic foot ulcers admitted to the infectious diseases ward of Imam Khomeini Hospital, Tehran. Sampling was done by scraping the feet and between the toes skin in diabetic patients with diabetic ulcers. At first suspect colony was cultured on blood agar, then for determination gram stain was done and then to determine the accurate detection of differential and selective media and biochemical tests was used.

**Results:** In affected tissue, S. epidermidis 19/2%, S. saprophyticus 0/7%, E.coli 1/3% and 78/8% no bacteria was found. In normal tissue 17/2% %, S. epidermidis and each of the S. saprophyticus and E.coli was 6/6%, which compared to affected tissue, their participation is more.

**Conclusion:** S. saprophyticus and E.coli was shown very more in the normal tissue and in the affected tissue with fungi, these bacteria were not found but each of the tissues involved to S. epidermidis. In general, affected tissue with fungi less affected by bacteria and healthy tissues affected with a greater percentage of bacteria.

**Keywords:** S. saprophyticus, E.coli, Diabetic patients

# P856 - 957: INHIBITORY EFFECT OF AQUEOUS EXTRACT OF THREE PLANT SPECIES OF IRAN ON HSV-1 MULTIPLICATION

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**Background and Aim:** The treatment of HSV-1 diseases with the anti-herpes drugs often leads to the problem of viral resistance. There is a requirement for new efficient antiviral drugs. Medicinal plants with therapeutic application for different ailments in traditional medicine can be a useful way in this field. Therefore in the present study Camellia sinesis, Echium amoenumL and Nerium oleander with ethnomedical background were screened for antiviral effect on HSV-1 multiplication in different times.

**Methods:** Plants were extracted with decoction methods to obtain aqueous extracts. These extracts were screened for their cytotoxicity against Hep II cell line by CPE assay. Antiviral effect of the plant extracts were determined by Neutralization Test (NT) at times one, two and three hour.

**Results:** Nerium oleander extract was toxic (> 5 µg/ml) on Hep II cell line. Camellia sinesis inhibited HSV-1 multiplication at one and two hour that its antiherpes property decreased at three hour. Echium amoenumL had lowest antiherpes effect that at two hour was similar antiviral property of Camellia sinesis at three hour.

**Conclusion:** Camellia sinesis and Echium amoenumL showed significant Antiviral effect on HSV-1, but Nerium oleander plant was toxic on it. Camellia sinesis was inhibitor of virus multiplication at one hour at 50-1000 µg/ml. Two plants: Camellia sinesis and Echium amoenumL showed the most antiherpes effect when they used an hour after virus inoculation. Further research is required to find the mechanism of these plants' effects in order to be used in conformation of anti-herpes drugs.

**Keywords:** Inhibitory effect, aqueous extract, HSV-1

# P857 - 961: EVALUATION OF IGM, IGG ANTIBODIES RATE AGAINST CYTOMEGAL AND RUBELLA VIRUSES AND TOXOPLASMA PARASITE IN PREGNANT WOMEN REFERRED TO HEALTH CENTERS IN YASOUJ BY SEROLOGICAL AND PCR METHODS

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**Background and Aim:** Infection agents are very important during pregnancy. Because not only health of pregnant women threaten but also these caused fetal death and congenital anomalies in children. So, the aim of this study was to investigate the molecular and serological study of cytomegal and rubella viruses and toxoplasma parasite in pregnant women of Yasuj city by serological and PCR methods.

**Methods:** Specific antibodies test against cytomegal and protocol of Sina gene.rubella viruses and toxoplasma parasite were tested that using the ELISA and ELISA Reader Kit for them. Then the DNA extraction for toxoplasma parasite, cytomegal virus and RNA extraction for rubella virus and PCR testing were performed according to.

**Results:** In this study from 80 blood samples 30 sample showed positive results for anti-Toxoplasma parasite IgG (37.5%), 53 samples were positive resulst for anti-cytomegalovirus IgG (66.25%) and 79 with a positive result of anti-rubella virus IgG (98.75%) were reported.Among of 80 samples only one positive result for anti-rubella IgM (1.25%) were found.

**Conclusion:** Although with a serological test, can be determined the presence or absence of contamination. It is recommended that testing be done IgG Avidity.Because the presence of M immunoglobulin will not be a new disease. Although the high avidity indicates chronic infection, which signifies infection in certain interval of at least three to five months ago.PCR and amniocentesis testingwill be used to decide on treatment or termination of pregnancy.

**Keywords:** Rubella, Toxoplasma, Cytomegallovirus, Serological, PCR

# P858 - 980: GENOMIC SEQUENCING OF A STRAIN OF ACINETOBACTER BAUMANNII FOCUS ON METALLO-B-LACTAMASE (MBL) ENZYME

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**Background and Aim:** Antibiotic resistance rate is increasing Acinetobacter species, especially in Acinetobacter baumannii, as the most important pathogen of hospital. Imipenem-resistant is an organism expressing metallo-β-lactamase (MBL) enzyme, and is a serious agent of hospital infection holding a serious universal therapeutic challenge. Carbapenems are potent options for the treatment of A. baumannii infections.This research aimed to evaluate antibiotic resistant rate of A. baumannii isolated from patients admitted to educational hospitals of Mazandaran University of Medical Sciences. The rate of MBLs expression has been variable among imipenem-resistant A. baumannii isolates.

**Methods:** A total of 70 A. baumannii isolates were obtained from educational hospitals during 2015-2016. The antibiotics susceptibility was assessed using disk diffusion test. MBL positivity in A. baumannii was investigated using double disk synergy test (DDST) and polymerase chain reaction (PCR) with amplification of blaVIM-2 and blaVIM-1.

**Results:** From 70 A. baumannii isolates, 45 (31.5%) were imipenem-resistant. Among these, 21 (46.7%) were identified as MBL-producing A. baumannii isolates using DDST. Results of PCR test demonstrated the existence of 7 (33.3%) A. baumannii, producing blaVIM-1and 4 (19%) blaVIM-2.

**Conclusion:** Our study showed high frequency of gene in producing blaVIM-1- A. baumannii isolates from Mazandaran Hospitals was relatively high. Therefore, it is recommended that the distribution of MBL-mediated resistances be managed.

**Keywords:** Acinetobacter baumannii, Metallo-β-lactamases, sari

# P859 - 1024: THE FREQUENCY OF ENTEROTOXIGENIC STRAINS OF PSEUDOMONAS AERUGINOSA IN GASTEROINTESTINAL INFECTIONS

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**Background and Aim:** P. aeruginosa is an opportunistic environmental organism. Although it is occasionally detected as part of the normal human microflora of healthy individuals, it can cause serious infections in immunocompromised and critically ill patients. Pseudomonas aeruginosa is not generally considered as a cause of infectious diarrhea in the community- and hospital settings; however it was isolated from faeces of patients with diarrhea. This study was aimed to investigate frequency of P. aeruginosa infection and diversity of virulence genes among diarrhea patient.

**Methods:** A total of 1482 diarrheal stool samples were obtained from318 outpatients and 1164 inpatients during 2012-2016. Characterization of P. aeruginosa and other common enteropathogens was done by biochemical tests. The presence of lasB, aprA, exoY, exoS, exoU, exoT and cif encoding toxins was determined by PCR using specific primers.

**Results:** P. aeruinosa infection was characterized in 2.2% of oupatients and 3.7% of inpatients (total frequency of 3.4%). All of the 51 infected patients had diarrhea when P. aeruinosa was isolated from their stools. Nearly, 98% of the strains harbored lasB, aprA, exoY, while exoS (90%), exoT (39.2%), cif (92.1%), and exoU (0%) showed lower frequency in among them.

**Conclusion:** Involvement of P. aeruginosa in the intestinal infection was determined in current study. The absence of other known enteropathogenic bacteria and carriage of virulence genes among the isolates in the examined samples proposed association of toxigenic strains of P. aeruginosa with diarrhea in these patients. Further studies are needed to establish this relationship.

**Keywords:** Diarrhea, frequency, P. aeruginosa

# P860 - 1051: CHRONIC INFLAMMATION OF THE TIBIOTALAR JOINT WITH A LATERAL MALLEOLAR FISTULA: A RARE PRESENTATION OF TUBERCULOSIS

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**Background and Aim:** Skeletal tuberculosis accounts for 1-3% of all tuberculosis cases and 10-11% of extra-pulmonary tuberculosis. Ankle and foot involvement presents in less than 5% of all skeletal tuberculosis. Primary tuberculous pyomyositis, bursitis, and tenosynovitis are rare and account for about 1% of skeletal tuberculosis. Joint involvement of tuberculosis most commonly manifests as a mono-arthritis of weight-bearing joints in the hip or the knee. Trauma has been associated with tuberculosis in 30-50% of cases. As the elderly population is growing, the rate of tuberculosis in particular extra-pulmonary and atypical forms of disease has increased among older adults.

**Methods:** We report a 79-year-old woman complaining of chronic ankle pain, swelling and a lateral malleolar fistula. Her past medical and family histories revealed no previous tuberculosis. An ankle strain of her left ankle after slipping had occurred prior to her problem. There was no evidence of concomitant tuberculosis at other sites. The PPD test was negative. The combination of indolent onset of symptoms and compatible MRI findings strongly suggested the diagnosis.

**Results:** Ankle synovial biopsy showed necrotising granulomatous inflammation and PCR test detected mycobacterium tuberculosis genome in the synovial tissue.

**Conclusion:** A careful suspicion of the diagnosis of tuberculosis is paramount in patients with chronic mono-articular arthritis, even in absence of a positive tuberculin test or abnormalities on chest radiograph.

**Keywords:** Joint Tuberculosis, ExtraPulmonary, Chronic arthritis

**The Mechanisms of Pathogenicity in Infectious Diseases**

## P861 - 31: INVESTIGATION OF POLYMORPHISM IN PROMOTER REGION OF FICOLIN-2 GENE (FCN2) IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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**Background and Aim:** Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory disease that is characterized by chronic airway obstruction. Ficolin-2 in the innate immune system as a pattern-recognition molecule activates the lectin pathway of complement system indirectly through the mannose binding lectin (MBL) associated serine protease (MASP) and leads to phagocytosis and elimination of pathogens. The purpose of this study was to investigate the nucleotide changes in Ficolin-2 gene (FCN2) promoter region in patients with COPD.

**Methods:** After extracting DNA from blood samples of 50 patients, FCN2 promoter region was amplified with specific primers by PCR and analyzed after sequencing.

**Results:** The results of this study showed a reduction time of hospitalization in patients with polymorphisms in nucleotide 95 and 96. Two factors expedited the process of recovery in patients with the polymorphisms in nucleotide 95 and 96. First, the variable serum levels of Ficolin-2 and the effect of polymorphisms in nucleotide 95 and 96 in promoter region. Second, polymorphisms in nucleotide 95 and 96 by increasing serum levels of Ficolin-2 and their role in the innate immune system caused more rapid recovery of patients with the polymorphisms in nucleotide 95 and nucleotide 96.

**Conclusion:** The polymorphisms in nucleotide 95 and nucleotide 96 in the FCN2 gene promoter region caused accelerate response to treatment in patients with COPD and could be used as prognostic indicators to predict the duration of hospitalization in patients with COPD.

**Keywords:** FCN2 Gene, Chronic obstructive pulmonary disease, promoter region polymorphism

# P862 - 81: IN VITRO ASSESSMENT OF THE PROTOSCOLICIDAL ACTIVITIES OF THE EPHEDRA MAJOR METHANOL EXTRACTS

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**Background and Aim:** The basic approaches for treatment of human hydatidosis are surgery and chemotherapy. The risk of spillage of protoscoleces cannot be underestimated during surgery.

**Methods:** Various concentrations of the methanolic extracts (0.01-0.001%, mg/ml) were used for exposure times of 10, 20, 30, and 60 min.

**Results:** The Ephedra major different extracts tested, 0.1% concentration had strong scolicidal activity in 60 min. The stem extracts 0.1% had very strong scolicidal effects in 60 min of exposure time and the mortality rate decreased with the lower concentration.

**Conclusion:**The finding have shown that the scolicidal effects of Ephedra major root extracts against cystic echinococcosis protoscoleces were less effective, while the stem and leaf extracts showed more effects.

**Keywords:** Echinococcus granulosus, Ephedra major, Protoscolicidal activity, Hydatid cyst

# P863 - 86: A REVIEW ON CARCINOGENIC MECHANISMS OF ONCOGENIC VIRUSES

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**Background and Aim:** It is estimated that approximately 10 to 15 percent of worldwide cancers are related to viral infections. Oncogenic viruses include various classes of DNA and RNA viruses and induce cancer by a variety of mechanisms.

**Methods:** The mechanisms are divided to three classes: direct oncogenic viruses including: EBV, HPV, HTLV-1, and KSHV that causes Burkitt's lymphoma, Cervix cancer, Adult T-cell leukaemia and lymphoma, and Kaposi's sarcoma respectively. Indirect through chronic inflammation: This mechanism includes HBV and HCV viruses related to Hepatocellular carcinoma. Indirect through immune suppression by HIV-1.

**Results:** Direct oncogenic viruses have characteristics like, the entire or partial viral genome can usually be detected in each cancer cell, the virus can immortalize after the growth of target cells in vitro and The virus expresses several oncogenes that interact with cellular proteins to disrupt cell-cycle checkpoints, inhibit apoptosis, and DNA damage response, cause genomic instability, and induce cell immortalization, transformation, and migration. Both HBV and HCV cause hepatocellular carcinoma through chronic inflammation, which leads to the production of chemokines, cytokines, and prostaglandins secreted by infected cells and/or inflammatory cells.

**Conclusion:** The chronic inflammation also leads to the production of reactive oxidative species with direct mutagenic effects to deregulate the immune system and promote angiogenesis, which is essential for the neovascularization and survival of tumors. HIV-1 infection, mainly through immunosuppression, leads to increased replication of oncogenic viruses such as EBV and KSHV.

**Keywords:** Carcinogenic mechanisms, EBV, HPV

# P864 - 116: EVALUATION OF THE BIOFILM FORMING ABILITY IN SALMONELLA ENTERICA SEROVAR TYPHIMURIUM ISOLATES FROM POULTRY FLOCKS

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**Background and Aim:** Biofilms formation by bacteria are directly associated with many infections. Different studies were conducted to compare the ability of different Salmonella serovars to producing biofilm. The objective of this study was to investigate the biofilm formation ability of Salmonella Typhimurium isolated from poultry flocks.

**Methods:** Salmonella Typhimurium RITCC1730 and twenty-three clinical samples of Salmonella Typhimurium were evaluated for biofilm production. The extent of biofilm formation was measured by Microtiter plate based systems. Biofilm was quantified by eluting CV and determining the optical absorbance of the eluted dye at 570 nm. The optical density cut-off (ODc) was defined as the mean OD of the negative control (culture medium) and the isolates were classified as follows: non-adherent ($OD \leq ODc$); weak adherent ($ODc < OD \leq 2xODc$); moderate adherent ($2x\ ODc < OD \leq 4\ x\ ODc$); and strong adherent ($OD > 4xODc$).

**Results:** None of the isolates were capable of producing strong biofilm. Among the 23 Salmonella Typhimurium isolates, 78.26% (18/23) showed to be weak adherent on polystyrene microtiter plates, and were considered as presumptive biofilm producers. The remaining isolates and Salmonella Typhimurium RITCC1730 were unable to produce biofilm.

**Conclusion:** In conclusion, Salmonella Typhimurium isolates revealed a variety of biofilm formation which these differences could be attributed to strain variation.

**Keywords:** Salmonella Typhimurium, Biofilm, Poultry

# P865 - 262: MODELING THE POPULATION DYNAMICS OF ACQUIRED IMMUNITY TO PARASITE INFECTION

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**Background and Aim:** We present a model for the immunological response by the host against gastrointestinal parasites. We show that such modelling can have significant implications for real control programmes. Parasites invoke extremely complex immunological responses from their mammalian hosts.

**Methods:** So as to be able to construct a realistic model, we have to consider experimental observations. We introduce a variable, E, for the immune system: E=∫_(t-T)^t⟦L(t´)dt´⟧ where L(t) denotes the mean number of tissue-dwelling larvae in a host at time t with T the time-span over which the immune system retains memory of past infections. So, E is a measure of the number of larvae in the host during the time interval (t − T, t).

**Results:** For the biological facts we introduce an expression to describe the immune system's activity: I_?? (E)=?E²/(?+E²) where E is the input variable,? is the maximum functional activity of the host's immune response and ? provides the sensitivity of the immune system. ? also reflects the nutritional status of the host. ? may be host specific since it also has genetic terms.

**Conclusion:** According to assumption, and independent of the specific dynamical situation under consideration, the activity of the host's immune system leads to an increase in the mortality of the adult parasites. This requires an additional loss term in the dynamical equations for the mean worm burden, M(t), of the form −I M(t) < 0, where I , the strength of immunological response, works for a death rate for parasites; it depends on the level of infection.

**Keywords:** Population dynamics, acquired immunity, interpretation in genetics, nutritial statues

# P866 - 340: THE STUDY OF PROTEINASE ACTIVITY OF CANDIDA ALBICANS ISOLATED FROM SYSTEMIC CANDIDIASIS

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**Background and Aim:** Candida albicans is the most virulent among the Candida species, and can cause several forms of candidiasis in human. Proteolytic activity is regard as one of most important virulence factors of Candida albicans. The present study was aimed at determining in vitro proteinase activities in clinical species of Candida albicans isolated from systemic candidiasis.

**Methods:** All Candida albicans isolates were tested for proteinase secretion in bovine serum albumin (BSA) agar that contained yeast carbon base (1.17%), yeast extract (0.01%) and BSA (0.2%). The medium was adjusted to pH 5.0, sterilized by filtration and added to autoclaved 2% agar. The test strains were spot inoculated (~6 mm) and the plates were incubated at 37 ◦C for up to 5 days. Each isolate was tested in triplicate. The diameter of the colony and the post-incubation clearance zone around the colony were recorded, and the Pz value for proteinase activity represented the ratio of the colony diameter to the diameter of the colony plus the precipitation zone.(no activity (Pz=1), moderate activity (0.64>Pz<1), strong activity (Pz<0.64)).

**Results:** The proteinase activity was detected in all tested isolates as all Candida albicans isolates (100%) were positive for proteinase secretion. 23 isolates (76.6 %) had strong activity and 7 isolates (23.3 %) had moderate activity.

**Conclusion:** The identification of virulence factors in Candida albicans strains can elucidate their adhesion, invasion and infection process, thus leading to the development of more efficient antifungal therapies.

**Keywords:** Candida albicans, proteinase activity, systemic candidiasis

# P867 - 358: IL-8 AND IL-6 PRODUCTION BY MONONUCLEAR CELLS STIMULATED WITH P.AERUGINOSA EXTRACT IN DIFFERENT LEWIS BLOOD GROUPS

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**Background and Aim:** The Lewis blood group antigens ⟦Le⟧^a and ⟦Le⟧^b have been found on erythrocytes in secretions and fluids. Researchers have studied the relationship between Lewis blood type and susceptibility to diseases. The aim of this study was to evaluate and compare the amount of IL-6 and IL-8 production under the influence of Pseudomonas aeruginosa extract stimulation in different Lewis blood groups.

**Methods:** Lewis blood type was determined by monoclonal Lewis antibody. The bacterial extract was prepared by ultrasonic method. Peripheral blood mononuclear cells were separated and stimulated with P.aeruginosa extract. Following optimization and finding the best dose, the levels of IL-8 in the cultured soups were determined using the ELISA assay method.

**Results:** The frequency of Le? was 75.4% and Le? 24.6%. The results show that IL-6 level produced after stimulation was significantly more than IL-6 of the plasma and control in both of Le? and Le?. In IL-8 the results did not show a statistically significant difference. However, the mean production of this cytokine was higher in Lewis individuals with blood group (a+b-).

**Conclusion:** In the present study, the pattern of changes and the levels of IL-6 and IL-8 cytokines were somewhat similar. Thus, it can be said that due to higher mean level of inflammatory cytokines, Le (a+b-) individuals are more prone to autoimmune and inflammatory diseases as well as some malignancies.

**Keywords:** IL-8, IL-6, Lewis blood group, P. aeruginosa

# P868 - 438: ANTI-BIOFILM EFFECT OF FLUCONAZOLE ON BIOFILM FORMATION BY CANDIDA SPECIES

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**Background and Aim:** Candidiasis-associated biofilm formed by Candida species complicates treatment and contributes to unacceptable high mortality rates. The goal of this study was to determine the effect of fluconazole (FLC) on biofilm formation by candida species

**Methods:** In this study, effect of Fluconazole on biofilm by candida species was studied in 96-well microplate and then tetrazolium reduction was assayed. All data were analyzed using t-test by SPSS software.

**Results:** The MIC of FLC on biofilm by candida species was in range of 4 to 512 µg/mL and showed 4, 8, 32, 128 and 512 µg/ml for C. albicans, C. tropicalis, C. lusitaniae, C. parapsilosis, and C. glabrata, respectively.

**Conclusion:** Increase in MICs values of the drugs FLC against mature biofilms were seen than planktonic form of candida species.

**Keywords:** Biofilm, fluconazole, candida species

# P869 - 443: EVALUATION OF BIOFILM FORMATION IN CLINICAL CANDIDA ISOLATES

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**Background and Aim:** Candida biofilms are an important virulence factor for this yeast. Early detection of biofilm production may be useful for clinical decision because of its suggestive property for potential pathogenic capacity of Candida isolates.

**Methods:** In this study, the biofilm-forming ability was evaluated by a colorimetric assay using MTT dye among clinical isolates Candida species obtained from subjects with various clinical signs of candidiasis.

**Results:** MTT Assay showed that the highest biofilm-forming ability were seen in C. lusitaniae, followed by C. albicans, C. parapsilosis and C. glabrata. C. tropicalis was the species with lower biofilm metabolic activity.

**Conclusion:** The colorimetric method using the dye MTT has been used as an alternative to traditional methods for in vitro in fungal biofilms evaluation.

**Keywords:** Candida spp, biofilm, non-albicans species, colorimetric assay

# P870 - 444: SUSCEPTIBILITY CHARACTERIZATION OF CANDIDA SPP. TO FLUCONAZOLE

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**Background and Aim:** Candidiasis is an important fungal infection caused by yeasts belonging to the genus Candida. Candida spp. are recognized as opportunistic organisms capable of causing cutaneous, mucosal and systemic infections. The aim of this study was to evaluate the susceptibility to fluconazole (FLC) on six different Candida spp. isolated from subjects with various clinical signs of candidiasis.

**Methods:** In present study, antifungal susceptibility test to fluconazole were done using the broth microdilution technique.

**Results:** Our finding showed that MIC and MFC of FLC were in range of 16 to 128 µg/mL and 64 to 512 µg/mL, respectively.

**Conclusion:** Our results indicated that C. albicans was the most sensitive isolate among the tested isolates. Use of antifungal susceptibility testing is very important for choice of appropriate antifungal drugs.

**Keywords:** Candida spp, Fluconazole, antifungal susceptibility test

# P871 - 456: CO2 LASER VERSUS HALITA AGAINST ORAL PATHOGENS

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**Background and Aim:** Because of increase in antibiotic resistance, finding alternative treatments for controlling infections in oral cavity is critical. In this study we aimed to compare use of halite with CO2 laser radiation for controlling infections by S.aureus and P. aeruginosa.

**Methods:** Staphilococcus aureus (ATCC 29213) and Pseudomonas aeruginosa (ATCC 27853) were used as standard strains. The effect of CO2 Laser was evaluated 5, 10, and 15 seconds after exposure to the standard suspension of bacterium with energy density of 12.5 J/cm2 at a distance of 17mm. halite (Chlorhexidine digluconate 0.05%, Cetylpyridinium chloride (CPC) 0.05% and Zinc lactate 0.14%) was examined in the same condition.

**Results:** The average number of microbes was lower in the Halita group than CO2 laser group before 15 second (P-value <0.001). But after 15 second, No growth observed in CO2 laser group in contrary with Halita group (P-value <0.001). Average time for complete infection removal for Halita was 60 second and for CO2 laser was 15 seconds.

**Conclusion:** Findings of the present study showed that CO2 laser radiation is valuable tools for infection control in oral cavity infections. Also halite was successful for infection remove after 60 seconds. Using CO2 laser radiation in combination of halita mouthwash can help for complete eradication of infections from oral cavity.

**Keywords:** Halita, Co2 laser, chlorohexidine, Cetylpyridinium chloride, Infection control

# P872 - 471: THE ROLE OF SOME ENVIROMENTAL FACTORS ON HEMOLYSIN GENE EXPRESIONS IN SOME SERRATIAE MARCESCENS LOCAL ISOLATION

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**Background and Aim:** Serratia marcescens is involved in hospital-acquired infections (HAIs) and opportunistic pathogens .It has emerged as one of the most important causes of nosocomial infections. One of its virulence factors is a hemolysin/cytolysin that lyses erythrocytes and elicits in leukocytes an inflammatory response.

**Methods:** One hundred samples were collected from clinical and environmental sources in Baghdad city. All specimens were cultured on the selective medium DTC (Deoxyribonucleic acid Toludin blue Cefalotin) agar and specific differential media. After the growth of bacteria, the isolates were identified by microscopic examination and biochemical tests. The identification of S. marcescens confirmed by using the systems API 20E and VITEK-2. Also the identification of genus was conducted by detection the specific gene 16S rRNA by polymerase chain reaction Total RNA and DNA were extracted with TRIzol while total RNA was converted to cDNA and the gene expression of ShlA genes was conducted by using real-time quantitative PCR assay. It was found that the highest value of gene expression fold was recorded for the gene ShlA.

**Results:** It was apparent there was a direct proportion between absorbability for hemolysin values and folds of gene expression.

**Conclusion:** The changeover conditions growth of bacteria Serratia marcescens leads to changeover of gene expression.

**Keywords:** Serratiae, hemolysin, gene expression

# P873 - 554: CLONING AND EXPRESSION OF CELLULAR-RELATED EPITOPES OF URINARY TRACT INFECTIONS INTO PBAD VECTOR

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**Background and Aim:** Urinary tract infection is one of the most common infections that cause significant health problems in the world. Uropathogenic Escherichia coli, Proteus mirabilis and Klebsiella are main organisms that involved in these infections. Different epitopes from these three pathogens with similarity upper than 80% were selected. The epitopes were selected on the basis of T-Cell epitopes mapping. Their interaction with MHC-I was criteria for the selection.

**Methods:** The synthetic gene was obtained from Thermo Fischer Scientific. The synthetic genes were analysed by bioinformatic tools. The epitopes were obtained in fusion form by overlap PCR method, the resulting gene was cloned in pBAD expression vector. Then the construct was transformed into E. coli TOP10. The expression was analysed by SDS-PAGE and confirmed by western blotting.

**Results:** The genes cloned in pBAD showed homology with the sequences from Genbank. The sequencing confirmed the order of the genes cloned. The protein was expressed in pBAD expression vector [100 micro g/ml] and was confirmed by anti-His antibody in western blot. The immunogenicity and protectivity of this protein is under study.

**Conclusion:** A large part of the health systems in the world are occupied by urinary tract infections and governments spend huge costs for the treatment and recovery of Patients from these infections. On the other hands, antibiotic resistance in the not-far future will be a disaster for medical societies. This is the most important cause for increasing a necessity for producing a vaccine against urinary tract infections.

**Keywords:** Urinary tract infection, Escherichia coli, cloning expression

# P874 - 588: COMPARE THE RELATIONSHIP BETWEEN FUNGI AND AGE IN TISSUE OF PATIENTS WITH FUNGAL INFECTION

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**Background and Aim:** The global incidence of diabetes has increased dramatically over the past two decades. It is expected that the number of people with diabetes continues to rise in the near future. Although the incidence of type 1 and type 2 diabetes worldwide is increasing but it is expected that the this speed increase in type 2 diabetes in the future due to the increasing prevalence of obesity.

**Methods:** During the period of 9 months, three quarters, 65 patients with diabetic foot ulcers that their wounds did not receive any anti-fungal therapy or surgery, sampling done from referred to infectious diseases ward of Imam Khomeini Hospital of Tehran and then fungal infection were examined. The samples were collected on the plate. Then check patient records, according to the name - age was investigated and quickly moved mycology laboratory.

**Results:** The relationship existence between age and fungi that Candida parapsilosis fungus in old age and Aspergillus niger in early age most viewed and is more common, but this relationship was not strong communication and may be some cases the results differ. The weak link was shown that the type of fungi Penicillium and Aspergillus more at an early age was seen as a type of fungi one to four (types of Candida) was seen in old ages.

**Conclusion:** Therefore the existence of fungi, in the range of age 65 to 80 years reaches its climax, it seems that diabetic patients with immune deficiency with increasing age, this deficiency makes it more favorable conditions for the fungi.

**Keywords:** Fungi, Age, Fungal infection

# P875 - 665: CLONING AND EXPRESSION OF HUMORAL-RELATED EPITOPES OF URINARY TRACT INFECTIONS INTO PBAD VECTOR

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**Background and Aim:** Urinary tract infection is the most common infections that cause significant health problems in the world. These infections caused by three major organisms included Uropathogenic Escherichia coli, Proteus mirabilis and Klebsiella. Various epitopes from these three pathogens with similarity upper than 80% were selected on the basis of B-Cell epitopes mapping. Their interaction with MHC-II was criteria for the selection.

**Methods:** The synthetic genes were analysed by bioinformatic tools and was ordered from Thermo Fischer Scientific. The epitopes were obtained in fusion form by overlap PCR method, the resulting gene was cloned in pBAD expression vector. Then the construct was transformed into E. coli TOP10. The clone was confirmed by sequencing and the expression was analyzed by SDS-PAGE and confirmed by western blotting.

**Results:** The genes cloned in pBAD showed homology with the sequences from Genbank. The sequencing confirmed the order of the genes cloned. The protein was expressed in pBAD expression vector [300 micro g/ml] and was confirmed by anti-His antibody in western blot. The immunogenicity and protectivity of this protein is under study.

**Conclusion:** A large part of the health systems in the world are occupied by urinary tract infections and governments spend huge costs for the treatment and recovery of Patients from these infections. On the other hands, antibiotic resistance in the not-far future will be a disaster for medical societies. This is the most important cause for increasing a necessity for producing a vaccine against urinary tract infections.

**Keywords:** Urinary tract infection, Escherichia coli, cloning

# P876 - 758: CAPABILITY OF CIPROFLOXACIN, PENICILLIN AND TELITHROMYCIN IN THE LUNG ABSCESS TREATMENT AND CORRELATION BETWEEN TOOTH INFECTION AND LUNG ABSCESS

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**Background and Aim:** Lung abscess is a necrotic debris or fluid that caused by microbial infection. Lung abscess is often caused by aspiration, which can happen during altered consciousness. Some cases have prognosis is usually excellent respond to antibiotics. The purpose of this review was to elucidate the efficiency of Ciprofloxacin, Penicillin and Telithromycin in the treatment of lung abscess and also it was to evaluate tooth infection role in creation of lung abscess.

**Methods:** We did a systematic review of studies via searching in the PubMed, Ovide and Elsevier.

**Results:** Results were supported on the role of Telithromycin in lung abscess treatment as well as analysis showed Ciprofloxacin have good efficiency in treatment of it nevertheless Penicillin is not useful for lung abscess treatment. Results showed tooth infection can cause lung abscess when until tooth have infection and be accomplished dental procedures it should be noted bacteria of lung abscess and infected tooth are Gram-negative.

**Conclusion:** Due to the reviewed articles, Telithromycin and Ciprofloxacin can treat lung abscess and have good efficiency in despite of Penicillin Isn't good way for lung abscess treatment,so we recommend utilization of Telithromycin and Ciprofloxacin for lung abscess treatment, Moreover, we conclude by focusing on the results of this review that tooth infection can create abscess of lung by dental procedure on the infected tooth since bactrias of lung abscess and infected tooth are Gram-negative.

**Keywords:** Ciprofloxacin, Penicillin, Telithromycin, Lung abscess, Tooth infection

## P877 - 773: MULTIPLE SEQUENCE ALIGNMENT OF FLIC IN ESCHERICHIA COLI

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**Background and Aim:** Escherichia coli (E.coli) is one of the pathogens that colonized in human gastrointestinal tract. The Flagellin is known as a virulence factor making motility and interaction with host innate immune system. The flagellar filament is established through the polymerization of a single protein, FliC flagellin. FliC is a crucial virulence factor for the colonization of E.coli and has been a vaccine candidate to prevent E.coli infection. On the other hand, FliC activates innate immune responses through its recognition by Toll-like receptor 5 (TLR5) and adaptive immunity in the host.

**Methods:** Sequence diversity in FliC is observed in different clinical isolates but until now the effect of this diversity is unknown. To study the evolution of FliC, multiple sequence alignment (MSA) and positive selection analysis were performed. Then more structural investigation including structure prediction and molecular dynamics were used to find its critical region in evolution and pathogenesis.

**Results:** We found the distribution of domains including D1 and D0 and variable D2 and D3. Also we found that N-terminal and C-terminal regions are conserved but the central region, which interacts with TLR5, has more diversity in sequence and length.

**Conclusion:** Evolutionary analysis of fliC virulence factor of different E.coli strains suggests that this protein is conserved in all parts except for the middle part which makes TLR5 binding region. This part is diverse in both sequence and length and is the critical element involved in TLR5 binding and therefore E.coli pathogenesis.

**Keywords:** Evolution, Phylogenetics, fliC

# P878 - 909: VIRULENCE FACTORS IN CLINICAL PROTEUS SPP. ISOLATED FROM URINARY TRACT INFECTIONS IN NAJAF, CENTRAL IRAQ

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**Background and Aim:** Urinary tract infections (UTIs) are considered as one of the most common groups of infections in humans and Proteus species is a common cause of UTI in catheterized patients and those with urinary tract abnormalities. The aim of this study was to evaluate some virulence factors in order to find out any relation between special virulence factors and special manifestation of Proteus spp. in UTI at phenotypic levels.

**Methods:** In present study a total of 360 samples collected from UTI patients form three hospitals in Al-Najaf province. Bacterial identification assays were done by morphological and biochemical tests using API-20 E and VITEK-2 Compact System. Detection of some virulence factors including colonization factor antigen (CFA) I, II and III, swarming phenomena, production of hemolysin and protease were done by culturing on suitable media and using standard procedures.

**Results:** A total of 186 (51.6 %) significant bacteriuria were detected. Among total bacteriuria, 38 (20.5%) samples belonged to Proteus spp. and among them 23 (60.5%), 12 (31.6%) and 3 (7.9%) isolates were identified as P. mirabilis, P. vulgaris and P. penneri, respectively. In this study all isolates produced colonization factor antigen type I, II and swarming phenomena. 33 (86.8%) and 27 (71.0%) isolates were able to produce hemolysin and protease respectively.

**Conclusion:** The colonization of the urinary tract by Proteus spp. is accomplished through the expression of several virulence factors. According to our results, the contribution of all selected virulence factors in pathogenicity and also identification of Proteus spp. is remarkable.

**Keywords:** Virulence factors, Urinary tract infections, Proteus spp.

# P879 - 910: DETECTION OF SOME VIRULENCE ENCODING GENES IN PROTEUS MIRABILIS AND PROTEUS PENNERI ISOLATED FROM URINARY TRACT INFECTIONS

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**Background and Aim:** One of the most important pathogens causing UTIs are bacteria of the genus Proteus that using different virulence factors. Those were developed for survival in the host organism and are also used by bacteria to infect the host or fight the defense mechanisms. The study focused on some selected virulence factors at genotypic level including hpmA/ hlyA (Hemolysin), zapA (Protease), qnr (Quinolone resistance) and blaTEM (TEM β-lactamase) genes for identification of clinical Proteus mirabilis and Proteus penneri strains.

**Methods:** In this study 360 samples were collected from UTI patients form three hospitals in Al-Najaf province in Iraq and were identified by morphological and biochemical tests. Bacterial chromosomal DNA was extracted by a commercial nucleic acid extraction kit (Bioneer-Korea). Polymerase chain reaction (PCR) was used to detect the above mentioned genes in the genomes of the bacterial strains.

**Results:** Among total bacteriuria, 38 (20.5%) samples belonged to Proteus spp. Our results demonstrated that 32 isolates (84.2%) of Proteus spp. were positive for hmpA gene and 11 isolates (28.9%) were positive for hly gene. The results show that there were 27 (71.0%) positive isolates for zapA and 26 (68.4%) positive isolates for blaTEM gene, while 17 (44.7%) isolates possess qnr gene.

**Conclusion:** According to our results, detection of some virulence genes proved able to characterize the different species of the genus Proteus on a molecular basis. However, further evidences are required for the existence of more genetic differences within pathogenic Proteus spp.

**Keywords:** Virulence genes, Urinary tract infections, Proteus mirabilis, Proteus penneri

# P880 - 936: COMPUTATIONAL MODELLING OF ACIDIC RESISTANCE SYSTEM INHIBITION OF HELICOBACTER PYLORI BY CHEMICAL COMPOUNDS OF ACHILLEA MILLEFOLIUM EXTRACTS

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**Background and Aim:** Peptic ulcers caused by Helicobacter pylori. This bacteria by a complex acid resistance system has the ability to live and pathogenesis in the acidic environment of stomach. UreG protein plays a role in the transfer of nickel to the urease enzyme, which has a nickel-dependent activity and important in acidic resistance. The purpose of this study is using of computational modelling technique to evaluation of major chemical compounds potential of Achillea millefolium for inhibition of UreG protein.

**Methods:** A list of 10 major chemical composition of the Achillea millefolium plant was prepared. Their chemical structure was obtained from PubChem database. Ligands were designed by ChemSketch software. The file of this protein was obtained by protein data bank (4HI0). Setting of protein-ligand docking was defined by Autodock4 and after run of the interested algorithm, report file was analyzed.

**Results:** According to the RMSD table, it was found that all Achillea millefolium plant extract components are able to inhibition of UreG. Among 10 tested ligands 1,3-Dicaffeoylquinic with -13.64 kcal/mol binding energy, has the best docking with the UreG. This compound has the best steric hindrance in the GTPase site of the UreG.

**Conclusion:** Based on, all components of Achilles millefolium extract are appropriate for inhibition of the GTPase position of UreG. With inhibition of this protein, nickel don't available for enzyme. Accordingly Achilles millefolium plant can eradicate Helicobacter pylori in the stomach. For this purpose, we can tested compounds in this study was entered the molecular dynamic phase and laboratory studies.

**Keywords:** H.pylori, UreG, Acidic resistance, Achillea millefolium, modeling

# P881 - 972: INVESTIGATION OF SERUM LEVEL FICOLIN-2 PROTEIN IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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**Background and Aim:** Chronic obstructive pulmonary (COPD) is one of the common and progressive diseases. Which microbial factors contribute to its development There is a 50- 70% possibility that it may cause infection. Ficolin-2 protein moves to eliminate infectious agent by activating the innate immune system via complement. Therefore In this study we examined the relationship between serum levels of Ficolin-2 and treatment duration in (COPD) patients.

**Methods:** In this study, the blood sample of 48 (COPD) patient And 30 healthy subjects That their blood and urine tests without infection, as the control group were taken. the serum levels of ficolin-2 protein were evaluated using ELISA method.

**Results:** According to the research hypotheses (the relationship between the serum level and treatment duration and the relationship between lowness of serum levels and recurrence of disease) and according to The results of the analyzes conducted by t-test in this study that,Showed a significant correlation between serum levels and duration of therapy in this disease.

**Conclusion:** Significant correlation between serum levels and duration of therapy in this disease.

**Keywords:** Ficolin-2, chronic obstructive pulmonary disease (COPD), serum levels

# P882 - 992: INVESTIGATING THE ROLE OF EPSTEIN-BARR VIRUS IN THE INCIDENCE OF GASTRIC CANCER AND BREAST CANCER BASED ON THE EBNA1

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**Background and Aim:** Epstein - Barr virus (EBV) is a DNA virus from the herpesviridae family in gamma herpesvirinae subfamily and Lymphocriptovirus genus that encoded almost 85 genes. Different disease such as infectious mononucleosis, nasopharyngeal carcinoma, gastric cancer and Breast cancer caused by this virus. The gastric cancer is second more common cancer and the first causative agent of death in Iranian men. The breast cancer is the most common in Iranian women and the fifth leading cause of death in them. The aim of this study, was detection of frequency of EBV infection in patients with gastric cancer and breast cancer simultaneously.

**Methods:** In this cross sectional study was performed 135 Paraffin-embedded tissue samples fixed in formalin of patients with gastric cancer and breast cancer from pathology section collected and used 20 micron sections of the samples were prepared for DNA extraction. A pair of primers specific for amplification of Epstein-Barr nuclear antigen-1(EBNA-1) gene was used to PCR. Statistical analysis was performed with SPSS software.

**Results:** The incidence of EBV in gastric cancer samples for patients group were 10% (4/40) and in control were 3.1% (1/32). In breast cancer samples for patients group were 4.7% (2/42) and in control were 0% (0/21).

**Conclusion:** According to findings in this research and in consideration of the patients and the control groups for any of these cancers, no significant correlation between EBV infection and gastric cancer and breast cancer was found.

**Keywords:** Epstein - Barr virus, EBNA-1, Gastric cancer, Breast cancer, PCR

# P883 - 1013: PRO-INFLAMMATORY GENE EXPRESSION IN LEISHMANIA SELF-LIMITING WOUNDS IN BALB/C MICE

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**Background and Aim:** Leishmaniasis has several diverse clinical manifestations: ulcerative skin lesions, destructive mucosal inflammation, and disseminated visceral infection (kala azar). In some cases, the cutaneous disorder is self-limited. Examining the status of these cases can be important in expanding the information of this disease.

**Methods:** The specific primers were designed for pro-inflammatory genes including IL-1α, IL-1β , IL-12P35, IL-12P40, TNF-α and IFN- γ. Expression of these genes was analyzed using by RT-PCR the wound and spleen in Leishmania infected BALB/c mice.

**Results:** Pro-inflammatory genes, including TNF-α, IL-12P35 were expressed in mice infected wounds, and also IL-1β were expressed in the spleen.

**Conclusion:** Investigating the Inflammatory cytokines in self-limited Leishmaniasis is important to diagnosis and may be considered as indication in the notice of the inflammatory response in the wound is self-limiting and appropriate additional studies.

**Keywords:** Leishmania Wounds, self-limiting, BALB/c mice

# P884 - 1014: CHARACTERIZATION OF VIRULENCE MARKERS IN PSEUDOMONAS AERUGINOSA STRAINS ISOLATES FROM HOSPITALIZED PATIENTS

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**Background and Aim:** Pseudomonas aeruginosa is seldom a member of the normal microbial flora in humans. Many extracellular pathogenic determinants have been shown to be regulated by a complex regulatory circuit including quorum sensing pathway. These virulence markers are responsible for colonization and adhesion of bacterium to cell and destroy of host tissue. The aim of the current research was to survey virulence factors genes including algD, and plcH among the clinical isolates of P. aeruginosa.

**Methods:** During one year, 2015 to 2017, Pseudomonas aeruginosa isolates were recovered from inpatients hospitalized in Shiraz and in Yasuj cities, southwest of Iran. The specimens were cultured microbiological media. Bacterial identification was done by morphological and biochemical tests. Polymerase chain reaction method was used for detection of Virulence genes.

**Results:** Totally, 80 Pseudomonas aeruginosa isolates were obtained from hospitalized patients. Maximum number of cases were in the age group of less than 30 years (n=39, 48.75%). Forty-two (52.5%) isolates recovered from wound specimens. The algD virulence gene was detected in strains isolated from wound with the frequency of 95.24% (n= 40). In this study, algD gene was the least virulence gene detected among all isolates in Shiraz (95%; n= 38). The prevalence of plcH gene was 100%.

**Conclusion:** In current study wound isolated strains have a larger number of virulence determinants, in comparison to urine isolated strains, so, regular surveillance of virulence determinants, monitoring of antibiotic susceptibility pattern and designing practical guide antibiotic stewardship for Pseudomonas aeruginosa are suggested.

**Keywords:** Pseudomonas aeruginosa, Virulence Factors, hospitalized patients

# P885 - 1015: EVALUATION OF EXPRESSION OF TNF-A, IL1-A, IL1-B PRO-INFLAMMATORY GENES IN LIVER LEISHMANIA INFECTED BALB/C MICE

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**Background and Aim:** Leishmaniasis is a disease with different clinical symptoms. This study focuses on expression of pro-inflammatory gene. Investigating the expression of cytokines, especially in the liver, can be important in detecting the profile of inflammatory genes in cutaneous leishmaniasis.

**Methods:** Expression of these pro-inflammatory genes including IL-1α, IL-1β, TNF-α was analyzed using by RT-PCR in liver Leishmania infected BALB/c mice.

**Results:** Pro-inflammatory genes, including TNF-α, IL-1β were expressed in mice infected liver.

**Conclusion:** Current study indicated a role for Leishmania in expression proinflammatory genes in livers of infected mice.

**Keywords:** Leishmania, pro-inflammatory genes, liver,BALB/c mice

# P886 - 1017: INVESTIGATION OF THE EXPRESSION OF PROINFLAMMATORY GENES IN THE SPLEEN AND SKIN EXPERIMENTAL MODELS OF BALB/C MICE

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**Background and Aim:** As regards that cutaneous leishmaniasis is now accounted as a major problem in many developed and undeveloped countries around the world, types of diagnosis in animal models can be important in determining the function of this parasite. This study concerned the expression of inflammatory genes in an animal model of Balb/C mice injected with parasite and without infection.

**Methods:** The specific primers were designed for 6 proinflammatory genes including TNF-□, IL1-□, IL1-β, IFN-y, IL12-p35, IL12-p40. Expression of these genes was analyzed using by RT-PCR the wound in Leishmania infected BALB/c mice.

**Results:** Pro-inflammatory genes, including TNF-α were expressed in skin the injection site mice infected wounds, and also IL-1β were expressed in the spleen.

**Conclusion:** The expression of inflammatory genes in this model can be important in interpreting the experimental model of parasite injection.

**Keywords:** Leishmania parasite BALB/C mice Experimental Models

# P887 - 1025: AN INVESTIGATION ON THE STRUCTURE AND FUNCTION OF ANTICANCER TOXIN IN PSEUDOMONAS AERUGINOSA FOR DEVELOPMENT A NEW GENERATION OF IMMUNOTOXINS

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**Background and Aim:** Intelligent drug resistances of cancer cells, on the one hand, and side effects of drugs and other therapeutic pathways on normal tissues, on the other hand, is required a new approach with maximum efficiency and minimal side effects. In this regard, application of modified bacteria and their products with specific death domains might be provided effective therapeutic approaches.

**Methods:** Accordingly, in this study the protein sequences of Pseudomonas aeruginosa exotoxin A was retrieved from Ncbi database. Bioinformatics investigation with a variety of online and offline programs were then performed to identify critical motifs with possibly destructive function on cancer cells and validated by doucking.

**Results:** The results of this research led to reveal translocation domain (277-423 amino acid) that facilitates translocation of the catalytic domain into the cytoplasm of the cells and the catalytic domain (413-638 amino acid) that leads to the inhibition of protein synthesis.

**Conclusion:** Finally, molecular characterization of the selected toxin led to introduce the cell death domains with the capacity of the inhibition of the protein synthesis for development a new generation of immunotoxins. However, many details of confirmation about these novel anti-cancer drugs still need further is-silico and experimental supports.

**Keywords:** Cancer, Pseudomonas aeruginosa, cell death, immunotoxin

# P888 - 1043: ASSESSMENT THE CORRELATION BETWEEN THE PREVALENCE OF THE GENES ENCODING IRON UPTAKE RECEPTORS WITH BIOFILM FORMATION IN UROPATHOGENIC ESCHERICHIA COLI ISOLATED FROM URINARY TRACT INFECTIONS

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**Background and Aim:** Uropathogenic Escherichia coli (UPEC) are the most important cause of urinary tract infections (UTIs). The prevalence of antimicrobial resistance in patients with UTI is increasing, making treatment of these infections more difficult. Iron scavenger receptors and biofilm formation play important roles in pathogenicity of UPEC in the urinary tract. Thus, in this study, we investigated the possible correlation between the occurrences of the iron genes with biofilm formation in the UPEC isolates.

**Methods:** Totally, one hundred E. coli clinical was isolated from UTI patients and confirmed by routine tests. Genomic DNA from the samples was extracted and PCR amplification of four known iron receptor genes was performed. Then, we analyzed the ability of the isolates to produce the biofilms by using the microtiter phenotypic method.

**Results:** Our results showed that the biofilm production was significantly associated with the prevalence of yersiniabactin iron receptor fyuA, but these findings were not seen about the other iron genes. Of 85 fyuA positive isolates, 76 of them were biofilm producers. Our findings also indicated that fyuA gene had the highest prevalence among the strong biofilm producer UPEC isolates.

**Conclusion:** In accordance with our study, the close association between the biofilm formation and some iron uptake genes is reported among the UPEC strains. Such studies could be valuable in development of treatment or preventive strategies against UTIs.

**Keywords:** Urinary tract infection, Uropathogenic E. coli, iron receptors, biofilm formation

# P889 - 1098: DETERMINATION OF PHYLOGENETIC GROUPS OF E. COLI ISOLATED FROM INFECTION COLIBACILLOSIS POULTRY

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**Background and Aim:** Among diseases caused by Escherichia coli, there is a severe systemic form termed colisepticaemia, which is characterised by the presence of E. coli in the blood, and colonisation of organs including the heart, liver and spleen. The aim of the present study was to investigate different phylogenetic groups of E. coli isolated from broiler breeder with colibacillosis in Urmia.

**Methods:** Eighty swabs collected from liver and lung were cultured on MacConkey agar plates. Pink color colonies were isolated and confirmed as E.coli by beichemical tests and followed by multiplex-PCR to identify different phylogenetic groups.

**Results:** Out of 80 samples 21 isolates were identified as E.coli. Eight of isolates (38%) were belong to group A, 2 of them (9.5%) were belong to group B1, 6 of them (28.5%) were belong to group B2 and 5 of them (24%) were belong to group D2.

**Conclusion:** According to the results of present study different phylogenetic group were observed in breeder herds. Most of them were classified as group A which is commensal. Studies showed that pathogenic E.coli has a considerable antibiotic resistance rate which might be transmitted to broilers in different ways and poses economic constraint to poultry industry. Thus, important strides must be made on eradication of different pathogenic E. coli.

**Keywords:** Phylogenetic, E. coli, Colibacillosis

# P890 - 1151: STREPTOCOCCUS MUTANS ARE THE MAJOR CAUSE OF DENTAL CARIES

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**Background and Aim:** Streptococcus mutans is an optional gram-positive and anxiolytic coke that is the oral cavity flora in humans. This bacterium is the most important cause of decay and tooth decay worms. 25 species of oral streptococci have been discovered. Each of these species occupies certain places of the mouth. An imbalance between the oral microflora will lead to oral and dental illness. Streptococcus mutans by damaging sucrose and producing lactic acid can damage enamel. This bacterium also uses sucrose to make dental plaque. A dental plaque is made of dextran, a kind of polysaccharide. Observing oral hygiene and using a toothbrush prevents bacterial growth, the formation of plaque and tooth decay.

**Methods:** -

**Results:** The consumption of fruit after taking sweets cleans the sugar from the teeth and alkalises the pH of the oral environment, which prevents tooth decay. For example, the lowest dental caries in children in Yazd province, despite the highest sugar intake in Iran, due to the highest consumption of fruit in this province.

**Conclusion:** The consumption of fruit after taking sweets cleans the sugar from the teeth and alkalises the pH of the oral environment, which prevents tooth decay. For example, the lowest dental caries in children in Yazd province, despite the highest sugar intake in Iran, due to the highest consumption of fruit in this province.

**Keywords:** Streptococcus mutans, dental caries

## The Nosocomial Infections

### P891 - 22: EVALUATION OF MICROBIAL FLORA ON THE HANDS OF HEALTH CARE WORKERS IN ARYA HOSPITAL OF MASHHAD ON 2013

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**Background and Aim**: Nosocomial infections are a major challenge to the health care systems and results in significant morbidity, mortality and economic burden. Hospitals are the workplaces where number of direct contacts between the hands of health care workers and the patients highly need the best hygiene standards. The objective of this study was to determine the microbial flora on the hands of health care personals in Arya Hospital of Mashhad on 2013.

**Methods:** In a cross sectional descriptive study all health care workers were screened at the beginning and in the end of each shift in different wards of the hospital. Samples of their hands were cultured on specific media. Bacterial isolated were identified using standards microbiological procedures. Then antimicrobial susceptibility pattern were determined.

**Results:** A total of 206 samples were cultured. Contamination of hands was observed in 62.2%. Most isolates were coagolase negative staphylococcus (CNS).Most sensitive antibiotics for this organism were vancomycin,imipenem and clindamycin(100%).Methicillin resistance was observed in 28.1%.The beginning of all three shifts were more contaminated than the end. Workers in Delivery Room and Operation Room had the most and the least contamination with 75% and 39.4% respectively.

**Conclusion:** Health care workers hands were contaminated mostly with coagolase negative staphylococcus .Medical personnels, mainly at the beginning of shift, especially in the Delivery Room. Must follow careful hand washing technique to minimize transmission of diseases.

**Keywords:** Nosocomial infection, Microbial flora, Hospital

# P892 - 64: EFFECT OF PLANT EXTRACTS, MIND AND BASIL ON CLINICAL SAMPLES AND THE STANDARD BACTERIA E.COLI USING DISK DIFFUSION AGAR IN HAMEDAN CITY

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**Background and Aim:** Increasing expansion of drug resistance among bacteria has resulted in paying more attention to finding new methods to prevent occurrence of resistance and also, finding appropriate medicines with lower toxic and side effects. Pathogenic strains of Escherichia coli are important in digestive diseases in humans and animals.

**Methods:** Mint and basil plant were collected from vegetable farms of Hamadan City and after drying and preparation of ethanolic extracts of the plants in concentrations of 25, 50, and 100 milliliter were held in sealed containers inside refrigerator. The considered bacteria was separated from clinical sample and after recognition of them using standard protocol, diameter of growth and no growth zones in these concentrations were measured and recorded using disk fusion method.

**Results:** According to findings of the research, Gentamicin, Ampicillin, Ciprofloxacin and Cotrimoxazole which were applied as control, were observed more effective than mint and basil extracts on E. coli tested in this study.

**Conclusion:** The most anti bacterial effect concentration against Escherichia coli bacteria was 100 milligram per liter. Result of the current study showed that extracts of mint and basil with high doses will be effective on digestive diseases.

**Keywords:** Extract, Mint , Basil, Escherichia Coli, Antibacterial, Disk Difusion

# P893 - 112: THE PREVALENCE OF BACTERIA ON MOBILE PHONES OF STUDENTS IN TEACHING HOSPITALS OF ARAK UNIVERSITY OF MEDICAL SCIENCES

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**Background and Aim:** Today, mobile phones are one of the most life of the equipment and people working with the necessities of life as they know it and this has led to the repository of microorganisms transform mobile phones. The aim of this study was to determine the types of bacteria present on mobile phones in Arak University of Medical Sciences.

**Methods:** The samples were prepared from the mobile phone students in hospitals. Samples from all parts of the mobile phone were conducted. Then, samples cultured on blood and agar Macconkey agar and were incubated at 37 ° C. With the growth of bacteria after diagnostic tests were identified. The data were analyzed in terms of different variables chi-square test.

**Results:** In this study, 20 samples of bacteria such as Staphylococcus aureus, streptococcus, Bacillus subtilis, E.coli and Shigella was observed in mobile students. The results show that from the total 172 samples from mobile, 126 has a bacterial infection. Among the most common bacteria Staphylococcus aureus (85%) has been found. Enterobacteriaceae (6.4%) and bacillus (4.7%) and Corynebacterium with (2.9%) and Micrococcus with (0.6%) found in samples.

**Conclusion:** The results showed significant bacterial contamination of mobile phones that can be an important factor in transmission of nosocomial infections. Fisher's exact test shows that there is a statistical correlation between the section and the types of bacteria. And The Fisher exact test shows that the frequency of bacteria based on sex, type of phone and hospitals are not statistically significant.

**Keywords:** Microbial contamination, Mobile,teaching hospitals

# P894 - 140: NOSOCOMIAL INFECTIONS IN THE INTENSIVE CARE UNIT: INCIDENCE, RISK FACTORS, OUTCOME AND ASSOCIATED PATHOGENS IN A PUBLIC TERTIARY TEACHING HOSPITAL OF ESFAHAN UNIVERSITY OF MEDICAL SCINCE

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**Background and Aim:** The increased morbidity and mortality associated with nosocomial infections in the intensive care unit (ICU) is a matter of serious concern today. To determine the incidence of nosocomial infections acquired in the ICU, their risk factors, the causative pathogens and the outcome in a tertiary care teaching hospital.

**Methods:** This was a prospective observational study conducted in a 16 bedded combined medical and surgical ICU of a medical college hospital. The study group comprised 280 patients admitted for more than 48 h in the ICU. Data were collected regarding severity of the illness, primary reason for ICU admission, presence of risk factors, presence of infection, infecting agent, length of ICU and hospital stay, and survival status and logistic regression analysis was done.

**Results:** The nosocomial infection rate was 12.3% (95% confidence interval 7.63–15.12%). Pneumonia was the most frequently detected infection (67.01%), followed by urinary tract infections and central venous catheter associated bloodstream infections. Prior antimicrobial therapy, urinary catheterization and length of ICU stay were found to be statistically significant risk factors associated with nosocomial infection. Nosocomial infection resulted in a statistically significant increase in length of ICU and hospital stay, but not in mortality

**Conclusion:** Nosocomial infections increase morbidity of hospitalized patients. These findings can be utilized for planning nosocomial infection surveillance program in our setting.

**Keywords:** Intensive care unit, morbidity, mortality, nosocomial infection, risk factors

# P895 - 230: MICROBIOLOGICAL CONTAMINATION OF HOSPITAL TEXTILE, EFFECTIVENESS OF NEW LAUNDRY DETERGENT

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**Background and Aim:** Hospital linen is clearly recognized as a potential reservoir for microorganisms and could be a vector of disease transmission. Contaminated textiles and fabrics often contain high numbers of microorganisms. During laundering, along with new laundry powder, chemical inactivation of microbes on fabrics can be achieved by using new bleach component. Surfactant in formulation will also exert some chemical inactivation action against certain species.

**Methods:** Germ carriers made of cotton fabric are contaminated with a test suspension of microorganisms. After drying the carriers are transferred into cotton bags and then the disinfection process in the washing machine is performed. At the end of the disinfection step of the procedure, each carrier is transferred into a separate tube containing neutralizer. The number of surviving bacteria in each sample is determined and the reduction rate is calculated.

**Results:** Results showed that there was a reduction of bacteria with 7-8 log10 CFU after 40 min exposure to 5 g/l detergent powder in laundering process.

**Conclusion:** Several tons of laundry is produced in hospitals every day. Textiles are a common material in healthcare facilities; therefore it is important that they do not pose as a vehicle for the transfer of pathogens to patients or hospital workers. Thus laundering is necessary. During laundering, chemical inactivation of microbes on fabrics achieved the washing cycle along with new laundry powder reduced the number of bacteria with 7-8 log10 CFU.

**Keywords:** textile hygiene, disinfection, hospital-acquired infections

# P896 - 310: THE ABILITY OF BIOFILM FORMATION IN PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM SKIN INFECTIONS

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**Background and Aim:** Pseudomonas aeruginosa is one of the most important factors for nosocomial infections, some strains of Pseudomonas have the ability to produce biofilm. The most important property is that biofilms serve as an impenetrable barrier to prevent penetration of antibiotics into the biofilm and thereby the survival of bacteria in biofilms. The aim of this study was to evaluate the ability of biofilm formation in Pseudomonas aeruginosa strains isolated from skin samples.

**Methods:** After collecting 200 samples of skin, cultures and primary isolation and identification of Pseudomonas colonies, strains resistant to ciprofloxacin were identified using disk diffusion according of CLSI metod. Finally strains resistant to ciprofloxacin, the ability to form biofilm in the Congo red agar were identified.

**Results:** After the study, 87 samples were isolated pseudomonas, 19 of them were resistant to ciprofloxacin, of which only 5 samples had the ability to form biofilm.

**Conclusion:** Pseudomonas aeruginosa are able to produce biofilm, this bacteria make black colony in congo red agar, and black colony is reason to produce biofilm in this bacteria.

**Keywords:** Pseudomonas aeruginosa, ciprofloxacin, biofilm, Congo red agar

# P897 - 335: OPTIMIZING CONDITIONS FOR EXTRACTION OF DRACOCEPHALUM KOTSCHYI AND STUDY THE ANTIFUNGAL EFFECTS AGAINST CANDIDA ALBICANS

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**Background and Aim:** Candidiasis is one of the most common infection caused by opportunistic fungi, such as different Candida species. Candidiasis can cause an extensive spectrum of clinical syndromes, such as a colonization of mucosal tissues, to systemic pictures, with the invasion of different organs. A variety of herbal extracts have been widely studied to find an efficient alternative treatments for these infections. Dracocephalum kotschyi extract has been found to have effective antifungal properties.

**Methods:** In this study, response surface methodology (RSM) was employed to optimize main extraction parameters in order to maximize the antifungal effects of the produced extracts. Temperature, extraction time and plant powder to solvent (PP/S) ratio were selected as the independent factors. The antifungal susceptibility of the extracts against Candida albicans was tested by agar well-diffusion method as the response.

**Results:** The results showed that a partial third-order polynomial model was applied for fitting experimental data with multiple regression coefficients (R2) of 0.86. P-value of the model was 0.002. Extraction time, quadratics of temperature and (PP/S) ratio, interaction of extraction time and (PP/S) ratio, and temperature and (PP/S) ratio had significant effect ($P<0.05$) on antifungal activity of the obtained plant extracts. The optimum condition for extraction were predicted to be: 3.36 h extraction time, 56.4 temperature and 0.65 (PP/S) ratio.

**Conclusion:** The study showed that optimization of the extraction conditions was successfully performed using RSM. It could provide a model to explain and predict the responses of well-diffusion method regarding the highest antifungal activity of the extracts.

**Keywords:** response surface methodology (RSM), Dracocephalum kotschyi, plant extraction, antifungal activity, Candida albicans

# P898 - 403: A COMPARISON OF POSITIVE-CULTURES OF NOSOCOMIAL INFECTIONS IN INTERNAL AND SURGERY ICUS

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**Background and Aim:** Nosocomial infection refers to infections that occur in patients 48-72 hours after hospital admission. The present study aims to compare positive-cultures of nosocomial infections in internal and surgery ICUs.

**Methods:** The present descriptive-analytical, cross-sectional study was conducted on patients admitted to the internal ICU and the surgery ICU of two training hospitals in Birjand. Samples were collected from the patients 48-72 hours after admission and were assessed by a microbiologist in order to determine the state of infection in the patients. The data collected were analyzed in SPSS-16 using descriptive statistics and the Chi-square test at the significance level of $\alpha$=0.05.

**Results:** The prevalence of nosocomial infections was significantly higher in the internal ICU compared to in the surgery ICU (27.2% vs. 10.3%; P<0.001). The most common nosocomial infections were respiratory (47.9%) and urinary (45.9%) infections in the internal ICU and respiratory (38.2%) and surgery wound (13.2%) infections in the surgery ICU. In both ICUs, the prevalence of nosocomial infections increased significantly in the patients with their duration of hospital stay (P<0.001). Moreover, a significant difference was observed between the two ICUs in terms of infection-related mortality, as 5.62% of the positive-culture patients in the internal ICU and 39.7% of the positive-culture patients in the surgery ICU died (P<0.001).

**Conclusion:** Positive-culture infection is more prevalent in internal ICUs compared to surgery ICUs. The duration of stay should be reduced as much as possible in order to reduce these infections.

**Keywords:** Internal ICU, Surgery ICU, Positive-Culture Infection

# P899 - 439: EVALUATION OF ANTI FUNGAL ACTIVITY OF EUCALYPTUS CAMALDULENSIS ESSENTIAL OIL ON CANDIDA ALBICANS AND CANDIDA GLABRATA AND SACCHAROMYCES CEREVISIAE IN VITRO

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**Background and Aim:** Eucalyptus is a plant of the Myrtaseae family with anti-microbial ,Anti-cancer, anti-inflammatory, anti-oxidant, anti-hyperglycemia, anti-malaria properties. Because increasing resistance to pathogenic fungi commonly used antibiotics, researchers are trying to find antimicrobial agents as alternative medicines are of plant origin. The aim of this study was to investigate the effects of antifungal eucalyptus essential oil on Candida albicans, C. glabrata and Saccharomyces cerevisiae.

**Methods:** In this study, essential oil were extracted with water distillation (Hydro-distillation). Then its antifungal effect were determined in two ways disc with concentrations 1000, 500 250 Mg/ml of essential oil and minimum inhibitory concentration MIC and MFC in dilutions 1 / 0-1% for fungal strains.

**Results:** The results showed that the use of eucalyptus essential oil as an anti-growth can be effective on the fungus and generally in all concentrations tested inhibition create By Candida albicans larger than others, and the greatest inhibition 41 mm at 1000 Mg/ml concentrations for C. albicans and the slightest inhibition zone with a diameter 6 mm at a concentration of 250 Mg/ml is particularly Saccharomyces cerevisiae.

**Conclusion:** The results of this study indicate that Eucalyptus essential oil significantly effective on the fungus as an antimicrobial and anti-growth and Measure the diameter of growth inhibition by these fungi on the plate that have been under eucalyptus Effects Suggests that testing fungi are sensitive to Eucalyptus essential oils are quite significant.

**Keywords:** Eucalyptus, Candida albicans, Candida glabrata, Saccharomyces cerevisiae, MIC, MFC

# P900 - 480: THE PREVALENCE OF PANTON VALENTINE LEUKOCIDIN POSITIVE IN METICILLIN RESISTANCE S. AUREUS ISOLATED FROM SKIN AND SOFT TISSUE INFECTION

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**Background and Aim:** Panton Valentine Leukocidin (PVL) has been linked with invasive Staphylococcus aureus skin and soft tissue infections. Aim: To determine the prevalence of Panton-Valentine leukocidin gene and antibiotic susceptibility pattern of S. aureus isolated from skin and soft tissue infection (SSTI).

**Methods:** A cross-sectional study was conducted among 179 S. aureus isolates were collected from wound samples from 338 SSTI patients referred to the Razi dermatology clinic in Tehran from August 2014 to October 2015. A questionnaire regarding the risk factors for MRSA colonization was completed for each patient. S. aureus susceptibility to antibiotics was determined by the disc diffusion method. PCR assay was used to detect mecA gene and Panton-Valentine leukocidin (PVL) genes.

**Results:** PVL gene detected in 19.5% of S. aureus isolates. The mecA gene was positive in 43.5% of S. aureus isolates. 57.1% of PVL positive isolates were MRSA. 54.2% of PVL positive patients had pemphigus. The highest rate of resistance was seen to penicillin, tetracycline, cefoxitin, oxacillin, azitromycin and ciprofloxacin respectively in PVL positive isolates. Significance difference was observed between gentamycin and cefazolin susceptibility among PVL positive strains. The risk factors among PVL positive patients were the usage of cephalexin ($P < 0.04$).

**Conclusion:** More than forty percent of isolates were MRSA. More than half of PVL positive isolates were MRSA. PVL-positive strains were seen in more than half of patients with pemphigus.

**Keywords:** Staphylococcus aureus, methicillin-resistant staphylococcus aureus(MRSA), SSTI, Panton-Valentine leukocidin (pvl)

# P901 - 584: COMPARISON OF THE PREVALENCE OF ENTEROVIRUSES IN BLOOD SAMPLES OF PATIENTS WITH AND WITHOUT UNSTABLE ANGINA

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**Background and Aim:** Although the role of enteroviruses has been proved in heart diseases, extensive information is not available on the association between enteroviruses and unstable angina. In the present study, the authors compared the prevalence of enteroviruses in patients with and without unstable angina.

**Methods:** Blood samples were taken from 51 patients with unstable angina and 55 patients without unstable angina or myocardial infarction as a control group that admitted to Imam Reza and Ghaem hospitals (Mashhad, northeast of Iran). RT-PCR was performed using specific primers for the detection of the enteroviruses in blood samples of study subjects.

**Results:** Patients with and without unstable angina were similar in age and sex with the mean age of 62.6±12.8 and 59.7±12.7 years respectively. Prevalence of the enteroviruses in the age group of patients with unstable angina was higher than that of the control group (patients without unstable angina). There was a higher prevalence of enterovirus RNA positivity in the blood samples of women with unstable angina than those without unstable angina, however, no significant difference was observed in men.

**Conclusion:** Our data showed that enteroviral RNA positivity was higher in patients with unstable angina compared to those without unstable angina. However, the differences between the two groups were not statistically significant.

**Keywords:** Unstable Angina, Enterovirus, Reverse Transcriptase PCR

# P902 - 628: AN INVESTIGATION OF DRUG SUSCEPTIBILITY OF ISOLATED ASPERGILLUS SPECIES TO ANTIFUNGAL DRUGS IN THE ICU OF HOSPITALS IN INVITRO

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**Background and Aim:** Invasive aspergillosis is the most threatening disease in patients with immune system defects that causes nosocomial fungal infections with high mortality among them. The aim of this study was to assess drug susceptibility on aspergillus sp. isolated from the hospitals.

**Methods:** After collecting 160 plates containing dextrose agar from the air and the environment of hospitals, the incubation and identification of macroscopic morphology and microscopy of susceptible colonies to aspergillus was done. After DNA extraction, molecular identification was performed using Universal fungal primers (ITS gene) and using PCR technique and eventually sequencing. Drug susceptibility test using the microdilution method for molecular identification of isolates was performed.

**Results:** According to the study of 40 isolates suspected of Aspergillus, for 11 isolates after the sequencing, 5 cases were A. flavus, 3 cases A. sydowii, 1 case A. fumigatus and 2 cases A. Oryzae. definitive identification was made. Regarding to the susceptibility test, A. sydowii and A. fumigatus were sensitive to Amphotericin and Voriconazole and were resistant to Itraconazole. A. sydowii was resistant to Caspofungin while A. fumigatus was sensitive to the drug. A flavus were susceptible to all the drugs.

**Conclusion:** There were a number of reasons including delayed diagnosis, lack of appropriate curing, and the existence of various diseases and neutropenia which could lead to the high mortality rate of patients with aspergillosis, especially in patients of intensive care units (ICUs).

**Keywords:** Druge susceptibility, Aspergillus SP., ICU

# P903 - 696: INVESTIGATION OF THE FREQUENCY OF ENTEROTOXIGENIC STAPHYLOCOCCUS AUREUS INFECTION AMONG OUTPATIENTS AND INPATIENTS WITH GASTROENTERITIS IN TEHRAN

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**Background and Aim:** This study was aimed to assess the frequency of enterotoxigenic S. aureus infection among outpatients and inpatients with gastroenteritis in two hospitals in Tehran, Iran.

**Methods:** Totally, 258 diarrheal faecal samples were collected and transported to the laboratory. All demographic and clinical data of patients, including age, gender, antibiotic treatment and medications' history were collected in a standard questionnaire. The homogenized samples were cultured on mannitol salt agar and blood agar medium and identified by routine bacteriological methods and PCR using species specific primers. The isolated bacteria were evaluated by PCR tests for detection of common enterotoxin genes sea, sec and see.

**Results:** Infection with S. aureus was detected in 22.09% (57/258) of the samples (21% in outpatients (32/153) and 23% (24/108) in the hospitalized patients). sea+ (17.5%), sea+/see+ (5.2%), sec+(15.7%), sea+/sec+ (3.5%), and sea+/sec+/see+ (1.7%), were different toxigenic types of these strains among our patients. Toxigenicity of these strains was correlated with higher numbers of defecation per day, occurrence of watery diarrhea, and lower age group in these patients. More frequent infection with enterotoxigenic S. aureus was detected in the Pediatric unit (55.5%), which was higher than those detected among outpatient children with diarrhea (8.3%).

**Conclusion:** Toxigenic strains of S. aureus in the bowel exert important role in both inpatients and outpatients.

**Keywords:** Enterotoxigenic S. aureus, Gastrointestinal infection, Outpatients, Inpatients

# P904 - 783: A REVIEW OF NEW VACCINES AGAINST NOSOCOMIAL CLOSTRIDIUM DIFFICILE INFECTIONS

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**Background and Aim:** Hospital acquired infections have become one of the main concerns of patients and medical staff in healthcare institutions. Clostridium difficile is the most common cause of nosocomial infection among all pathogens. Prevention is the best option considering the fact that treatment in these cases is a difficult, time consuming and costly process. Vaccines when effective are the best way to prevent the infection.

**Methods:** In this paper, we reviewed 50 research papers and guidelines related to designing, developing and testing new vaccines against hospital acquired Clostridium difficile infection (CDI) and CDI prevention.

**Results:** In recent years, due to the emergence of epidemic antibiotic-resistant strains of C. difficile and newly introduced virulence factors, treatment of CDI has become rather difficult. Humoral immunity against C. difficile toxins can prevent bacterial infection. Three vaccine candidates are in phase II and III clinical evaluation. These vaccines prevent bacterial toxins from causing clinical signs in the patient. Although not yet in clinical trials, oral mucosal vaccines are being researched on. Another type of vaccine candidate that is in early stages of development aims to prevent bacterial colonization by targeting bacterial surface protein antigens, thus preventing the transmission of bacteria from one person to another.

**Conclusion:** Development of these new vaccines to prevent CDI is a promising prospect, considering the fact that among different methods for CDI prevention; only the vaccines provide sustained relatively long-term protection. Although it is likely that multiple methods will be used based on the result of human clinical trials.

**Keywords:** Nosocomial Infection, Healthcare Associated Infection, Clostridium difficile, Vaccine

# P905 - 853: ANTIBIOTIC RESISTANCE PHENOTYPES, ESTA GENE PRESENCE AND BIOFILM FORMATION AMONG PSEUDOMONAS AERUGINOSA STRAINS ISOLATED FROM BURN PATIENTS

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**Background and Aim:** Pseudomonas aeruginosa is a major cause of hospital-acquired infections. Biofilm is an important factor in P. aeruginosa infections since it leads to resistance to antibiotics. P. aeruginosa produces esterase estA during biofilm formation which can influence the structure of biofilm. This study was performed to evaluate the antibiotic resistance pattern and distribution of estA gene among P. aeruginosa strains isolated from burn patients.

**Methods:** 37 strains of P. aeruginosa were isolated from burn patients in Taleghani hospital in Ahvaz by standard bacteriological methods. Antibiotic susceptibility test was performed by disk diffusion method. Biofilm formation was measured by microtiter plate assay. Existence of estA gene was detected by PCR.

**Results:** Results showed 78.3% of P. aeruginosa isolates produced biofilm and the estA gene existed in 97.3% of isolates. the highest rate of resistance was observed to piperacillin/ tazobactam (92%) and lowest resistance was to colistin (8%).

**Conclusion:** Based on this study, there was no significant relationship between presence of estA gene and biofilm formation. high rate of resistance to antibiotics in P. aeruginosa is considerable.

**Keywords:** P. aeruginosa, antibiotic resistance, biofilm, esterase estA

# P906 - 875: DETECTION OF LASB GENE, BIOFILM FORMATION AND ANTIBIOTIC RESISTANCE PATTERNS IN BURN ISOLATES OF PSEUDOMONAS AERUGINOSA

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**Background and Aim:** Pseudomonas aeruginosa is a public health problem due to its biofilm formation ability and antibiotic resistance. P. aeruginosa produces elastase lasB which can affect properties of the biofilm. This study aimed to determine the antibiotic resistance pattern, biofilm formation and presence of the lasB gene among P. aeruginosa strains isolated from burn patients.

**Methods:** 75 positive samples of P.aeruginosa were collected from burn patients in Taleghani Hospital in Ahvaz. PCR was carried out for detection of lasB gene. Biofilm production was examined by microtiter plate assay. Antibiotic susceptibility test was performed by disk diffusion method.

**Results:** Biofilm formation was observed in 57/3% of the isolates. The prevalence of the lasB gene among the isolates was 85/3%. The highest rate of antibiotic resistance was seen against ceftriaxone (94/6%) and the highest sensitivity was seen against colistin (68%).

**Conclusion:** Biofilm formation among non-lasB isolates was lower than isolates with lasB, although this difference was not statistically significant (P= 0.101). Moreover, these isolates were more sensitive to imipenem and piperacillin/tazobactam. Rising antibiotic resistance is a serious alarm for public health.

**Keywords:** Pseudomonas aeruginosa, Antibiotic resistance, Biofilm, Elastase lasB

# P907 - 984: DETECTION OF THE COMMON BACTERIAL PATHOGENS AMONG PATIANTS SUFFERING FROM EMPYEMA USING PCR AND BACTERIAL CULTURE IN AHVAZ CITY

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**Background and Aim:** Empyema thoracis is known as the most common complication of bacterial pneumonia The causative organisms of pleural infection are different among various countries and for this reason, local epidemiological data needed to guide treatment.In this study we had investigated the frequency of S. aureus, S.pneumoniae, H.influenza and P.aeruginosa using PCR and bacterial culture among children suffering from Empyema.

**Methods:** This study was conducted from August 2016 to January 2017 at Abouzar children's Hospital, Ahvaz, Iran. In this study, we collected the pleura fluids from 105 children younger than 16 years of age admitted to this hospital with diagnosis of empyema tho¬racis. The DNA was extracted from PF specimens and then four pathogen mentioned in above detected by special primers for each species in PCR. In addition, the PF specimens were inoculated on the bacterial culture media and identified using Gram stain, colony morphology and biochemical characteristics.

**Results:** In our study, the age mean was 35.87 ± 3.58 years and men patients were 62 %. We identified 21 isolates as S. aureus, 48 isolates S.pneumoniae, 7 isolates as H. influenza and 6 isolates as P. aeruginosa by bacterial culture. Also, we identified 24 cases as S. aureus, 51 cases S.pneumoniae, 9 cases as H. influenza and 8 cases as P. aeruginosa by PCR.

**Conclusion:** PCR is a rapid and sensitive method for diagnosis of infection causes. In our study, detection was performed by PCR method. Most infections were caused S.pneumoniae,which suggests all children were vaccinated against this pathogen.

**Keywords:** Empyema, BACTERIAL culture, PCR

# P908 - 1001: FREQUENCY OF ADHESIN AND BIOFILM GENES IN STAPHYLOCOCCUS AUREUS ISOLATES FROM PATIENTS, PERSONNEL AND SURFACES IN BURN SHAHID MOTAHARI HOSPITAL

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**Background and Aim:** Staphylococcus aureus via the known virulence factors causes various infections and is one of the most common agents of infection in hospitalized burn patients. The aim of this study was to investigate the prevalence of genes related to adhesion factors of MSCRAMM and biofilm in Staphylococcus aureus isolates in a burn hospital.

**Methods:** Isolates of S. aureus and MRSA obtained from patients, personnel and surfaces of burn hospital by biochemical tests have been identified and with detection of nucA and mecA genes have been confirmed. According to CLSI guidelines, susceptibility of isolates to 18 antibiotics performed by disk diffusion method. Adhesion gens have been detected using multiplex PCRs.

**Results:** Out of 167 S. aureus isolates, 64 % as MRSA and 35 % as MSSA were identified. MRSA isolates significantly have been shown more resistance than MSSA isolates. The most drug resistance were detected for penicillin (100%), imipenem (100%), cefoxitin (99%), norfloxacin (87%) and gentamicin (86%) in MRSA. All the studied isolates were susceptible to quinupristin–dalfopristin, linezolid and vancomycin. Among adhesion genes the most prevalence was eno (85.6%) and the rate of other genes were 71.8% fib, 70% clfB, 59.2 % cna and 17.9% fnbB. The biolfilm formation genes for icaA and icaD were positive for 72.4% and 85.6% of isolates, respectively.

**Conclusion:** Our result showed high prevalence of virulence factors and MRSA strains with higher rates of antibiotic resistance among burn hospital that need a better infection control policy.

**Keywords:** Adhesin, biofilm factors, Staphylocossus aureus, Burn center

# P909 - 1012: DETECTION OF TOXIGENIC CLOSTRIDIUM DIFFICILE IN CHILDREN

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**Background and Aim:** Clostridium difficile is a major nosocomial pathogen that infects the colon and causes a range of clinical manifestations from mild to severe diarrhea. The pathogenicity of this bacterium is related with the production of two large bacterial toxins. The aim of this study was to assess the detection of pathogenic toxin A/B-positive Clostridium difficile strains among hospitalized chidren with diarrhoea in Gonabad, Iran.

**Methods:** In present research hospitalized patients submitted to 22Bahman hospital (Gonabad, Iran) and if they had a liquid stool specimen were included. From November 2016 through July 2017, a total of 50 sequential stool samples from hospitalized patients were obtained for inclusion in this study. Stool samples were collected and Clostridium difficile toxin A/B immunoassay was performed according to manufacturer protocol.

**Results:** A total 50 patients with liquid stool sent for Clostridium difficile toxin A/B assay were enrolled in the study. Patients consisted of 18 males (36%) and 32 females (64%). Maximum number of studied patients were hospitalized in pediatrics ward (n=24, 48%). Overally, the 34.48% pediatric cases were positive for C. difficile toxin A/B by immunochromatographic assay. Frothy-four (88%) patients received on or more antibiotic treatment on admission and hospitalization.

**Conclusion:** Data revealed emergence of potentially highly virulent C. difficile isolates is alarming. community-acquired (CA) Clostridium difficile infection has emerged, we require to develop these strategies to the household. As a result, we need to refocus our prevention and management protocols.

**Keywords:** Toxigenic Clostridium difficile, Hospitalized patients, Children

# P910 - 1142: POSTCESAREAN WOUND INFECTION: PREVALENCE, IMPACT, PREVENTION, AND MANAGEMENT

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**Background and Aim:** Surgical site infection (SSI) is one of the most common complications following cesarean section, and has an incidence of 3%–15%. It places physical and emotional burdens on the mother herself and a significant financial burden on the health care system. Moreover, SSI is associated with a maternal mortality rate of up to 3%. With the global increase in cesarean section rate, it is expected that the occurrence of SSI will increase in parallel, hence its clinical significance. Given its substantial implications, recognizing the consequences and developing strategies to diagnose, prevent, and treat SSI are essential for reducing postcesarean morbidity and mortality.

**Methods:** In this research, we determine the biological mechanism of SSI and risk factors for its occurrence and summarize recent key clinical trials investigating preoperative, intraoperative, and postoperative practices to reduce SSI incidence in the Shahid Beheshti Hospital from 2015 to 2016.

**Results:** In this way we reduce SSI incidence in our hospital and minimize the length of hospitalization.

**Conclusion:** It is prudent that the surgical team who perform cesarean sections be familiar with these practices and apply them as needed to minimize maternal morbidity and mortality related to SSI.

**Keywords:** cesarean section, management, surgical site infection

Zoonoses and veterinary Microbiology

# P911 - 7: STUDY OF CUTANEOUS LEISHMANIASIS (CL) IN A FOCUS OF SOUTHERN IRAN

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**Background and Aim:** Abundance and distribution of reservoir hosts and vectors of CL is affected by various environmental agents. Human interventions and climatic agents are the most known environmental factors on this disease occurrence.The purpose of this study was to examine the epidemiological features of CL in Genaveh (one of the endemic foci of CL), Bushehr Province, in south of Iran.

**Methods:** To specify the epidemiology of CL during 2004-2008, Genaveh County was studied. Patients were detected based on their lesion clinical manifestations with CL or presence of amastigotes in Giemsa-stained smears. Information were collected using a questionnaire. Subsequently, the results were analyzed using the SPSS version 17.

**Results:** The results of this research revealed that totally 135 patients with the CL have been detected over 2004-2008. Mean incidence rate was determined 0.32/1000 population. Of the total cases , 63 and 72 patients were living in cities and villages, respectively. The results showed that the most cases have been reported in February (29.6%). The maximum disease prevalence was in winter. 73 patients (54%) were men, while 62 (46%) were women. More patients were in age groups 1-10 (28.2%). The highest number of lesions was related to hands (39.2%), feet (32.6%) and faces (23%), respectively.

**Conclusion:** Based on the results of this study, Genaveh County is an important region with partly great CL infection rate. Although the number of found cases of CL was 135 in five years, the real number may be much greater.

**Keywords:** Cutaneous Leishmaniasis, Epidemiology, Prevalence, Iran

# P912 - 8: DEFINITE VECTORS AND RESERVOIRS OF CUTANEOUS LEISHMANIASIS IN SOUTHEASTERN IRAN

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**Background and Aim:** This study describes isolation of Leishmania parasite from Meriones hurrianae rodent and Phlebotomus papatasi and P. salehi sand flies in rural areas of Chabahar County, followed by identification of the species using DNA analysis.

**Methods:** Rodents and sand flies were entrapped by live traps and sticky traps, respectively. In this research, infection of the rodents and sand flies observed through microscopic and PCR method. Giemsa-stained impressions from rodent's ears and sand flies midguts mentioned above were examined for amastigotes microscopically. The samples from infected rodents and sand flies were cultured in NNN+LIT medium and then the harvested parasites at the stationary phase were subjected to DNA extraction followed by amplification with RAPD-PCR.

**Results:** About 2.1% P. papatasi , 1.08% P. salehi , 17.8% M. hurrianae and 3.7% Tatera indica showed evidence of leptemonad infection. Leishmania DNA isolated from M. hurrianae , Phlebotomus papatasi and P. salehi produced distinctive bands of L. major with primers.

**Conclusion:** With concern to the results of this research , it is obvious that the ZCL foci in Chabahar County exist and this form is dominant.

**Keywords:** Molecular Characterization, RAPD-PCR, Reservoir Host, Leishmania major, Phlebotomus papatasi, Phlebotomus salehi , Meriones hurrianae, Tatera indica, Iran

# P913 - 25: THE PREVALENCE OF SERUM ANTIBODIES AGAINST HEPATITIS E IN PET OWNERS IN BUSHEHR

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**Background and Aim:** Hepatitis E virus is a small, spherical, non-enveloped,a single-stranded RNA virus. Although HEV infection is self-limiting but may also Fulminant form of the disease occur especially among pregnant women and children under two years Which lead to high mortality. this is usually spread by the fecal-oral route. The virus has 4 genotypes That genotype 3 and 4 strains are common between human and animal. Epidemic Zoonotic diseases due to increasing of keeping pets in a developing country is a matter of concern, this study examines the prevalence of Anti-HEV in pet owners in Bushehr during 1393.

**Methods:** 155 serum samples were collected from the pet owners in year 1393. Prevalence of serum Anti-HEV, was performed using the HEV Antibody Diapro ELISA kit.

**Results:** The positive rate of Anti-HEV were 11 person (7.1%). In 48 women and 107 men, 1(2.1%) and 10(9.3%) were positive respectively. According to statistical analysis, no significant difference was observed between the results and gender. The positive rate of anti-HEV in 42(27.1%) with a high school graduate, 68(43.9%) diploma and 45(29%) high school diploma were 1(2.4%), 3(4.4%) and 7(24.1%) respectively. statistical analysis showed that no significant difference was observed between level of education and infection.

**Conclusion:** In this study, we report that HEV is prevalent in pet owners .Due to the zoonotic nature of the disease and significant relationship between education level and prevalence rate among the owners, the need to educate the pet owner as well as timely vaccination of animals is evident.

**Keywords:** Anti-HEV, pet owners, Hepatitis E, Zoonosis

# P914 - 26: THE PREVALENCE OF SERUM ANTIBODIES AGAINST HEPATITIS E IN EMPLOYED FISHERMEN ON PERSIAN GULF FISHING VESSELS

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**Background and Aim:** Hepatitis E virus is a small, spherical, non-enveloped,a single-stranded RNA virus. Although HEV infection is self-limiting, But may also Fulminant form of the disease occur especially among pregnant women and children under two years Which lead to high mortality. this is usually spread by the fecal-oral route. Oysters grow in Water polluted with sewage, leads to Shellfish contamination. Because of the high population density, water resources, sharing food and the absence of health personnel on ships, The prevalence of intestinal diseases easily facilitated. So this study was to investigate the prevalence of serum antibodies against hepatitis E in fishermen's working on fishing vessels in the Persian Gulf.

**Methods:** 195 blood samples were collected from people who worked on fishing vessels in year 1393. To assess the prevalence of Anti-HEV, was performed by using ELISA HEV Antibody Diapro kits.

**Results:** The positive rates of anti-HEV were 44(22.6%). 184 (94.4%) subjects had no history of blood transfusion, while 11 cases (5.6%) had transfusion. According to Statistical tests there is no significant difference between blood transfusion and infection. The positive rates of anti-HEV in 15 person with a diploma, 60 person high school diploma, 120 cases illiterates were 1(6.7%), 15(25%) and 28(23.3%) respectively. significant differences were not found between education and the amount of pollution.

**Conclusion:** this study showed that the Anti-HEV positive rate appeared the high in fishermen and direct contact with fish and seafood could potentially be spreading infection to the community.

**Keywords:** Anti-HEV, fisherman, Hepatitis E, Zoonosis, seafood

# P915 - 36: INVESTIGATION OF DIROFILARIA IMMITIS INFECTION IN STRAY DOGS OF KERMANSHAH

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**Background and Aim:** Dirofilariasis is one of the zoonotic filarial infections inadvertently affecting the humans. It is caused by filarial nematodes of genus Dirofilaria, which naturally infects several domestic and wild animals, though canines are the principal reservoir hosts. Though human dirofilariasis as a zoonotic infection is thought to be rare, cases are being increasingly reported in the past few years making it a case for consideration as an emerging zoonosis in many parts of the world.

**Methods:** To evaluate the infection rate in stray dogs of Kermanshah,a total of 100 blood and serums samples were taken from stray dogs and evaluated through Modified Knott test and immunochromatography by CHW AgTest card kit.

**Results:** The results showed that the infection rate of heartworm by Knott and immuno chromatography in stray dogs was as 8% and 11%, respectively. Although the frequency of infection in male dogs and the age of 6 years and upper was higher but this difference was not significant in statistical analysis.

**Conclusion:** According to the result of this study Killing of infected stray dogs, Consumption of antifilarial drugs and warning the clinicians recommended.

**Keywords:** Dirofilaria Imitis, Kermanshah, Immunochromatography, knott

# P916 - 38: SAFETY IN HUNT RHINO

Farzaneh saboohi Saboohi[1]

1. Azad tehran

**Background and Aim:** Mucormycosis caused by more Zygomycetes is know fatal infections in Rhino and immunocompromised patients.

**Methods:** Limited data exist describing the syndrome caused 50 years old man with diabetes mellitus facial pain and right eye proptosis . They were treated with Liposomal amphotericin B and Endoscopic sinus sampling revealed A.elegans . In seven cases were on review ,most patients 86% were age of 40 years and most patients 71% susceptible . All magnetic resonace imaging or tomography of head showing eye or sinus inflammation.

**Results:** Most such infection occurred in patients after facial trauma ,with prompt surgical and antifungal therapy.

**Conclusion:** Hunters in sale contraband tusk must segregate rhinos illness and refusal to contact eye, face, skin .

**Keywords:** Mucormycosis , Liposomal amphotericin B

# P917 - 42: COMPARISON THREE DIFFERENT METHODS FOR RNA EXTRACTION FROM INACTIVE AVIAN INFECTIOUS BRONCHITIS (IBV) VACCINE USING REAL TIME RT-PCR

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**Background and Aim:** Avian infectious bronchitis (IB) is a viral disease caused by a gamma coronavirus (IBV). It is worldwide distributed and characterized by its heavy economic impact on the poultry industry. A sensitive and specific method for the diagnosis of infectious bronchitis virus (IBV) is of great importance. There are many different methods for RNA extraction of viral agents. In present study, one inactivated IBV vaccine examined to comparison three RNA extraction methods.

**Methods:** One inactivated IBV vaccine (OLVAC A+B, Pars Fatem Co.) was used. RNA extracted by RNX-Plus kit (Cinnagen company), RNeasy mini kit (QIAGEN) and Total RNA purification kit (Jena Bioscience), cDNA was synthesis by Fermentas cDNA synthesis kit (Thermo scientific), and Real time PCR was performed for IBV detection . Each sample was exam two times and the amplification resulting were compared.

**Results:** In comparison between results, sample was extracted by RNX-Plus has the best result.

**Conclusion:** RNA extraction by extraction kit with organic solvents is a more sensitive method in compared with RNA extraction by solid-phase extraction on silica kits.

**Keywords:** IBV, Real time PCR, RNA extraction

# P918 - 43: DETETCTION OF AVIAN META PNEUMOVIRUS SUBTYPES B COMMON BLACKBIRD (TURDUS MERULA) : THE FIRST REPORT IN THE WORLD

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**Background and Aim:** Avian metapneumo virus (aMPV), also known as avian pneumovirus or turkey rhinotracheitis virus, is the causative agent of turkey rhinotracheitis and is associated with swollen head syndrome in chickens. Four aMPV subgroups (A-D) have been reported previously based on genetic and antigenic differences. Evidence suggests that live bird markets (LBMs) play an important role in the epidemiology of the avian viral diseases.

**Methods:** We collected 50 oropharyngeal samples from Common blackbird (Turdus merula) in LBMs of Gilan Province (Iran) between October and December 2016. The presence of aMPV was determined by reverse transcription polymerase chain reaction (QIAGEN one-step RT-PCR kit) based on nucleoprotein gene.

**Results:** We detected positive sample in Common blackbird.Bioinformatics analysis and phylogenetic tree based on partial nucleotide sequences of the N gene shows that the detected aMPVs were classified in the subtype B.

**Conclusion:** It is the first report of aMPV in non-commercial birds in Iran and in new avian species. Knowledge of the frequency and type of contact between the various poultry market players should allow animal health authorities to develop a better understanding of factors influencing virus transmission between Iranian villages.

**Keywords:** Avian Metapneumo Virus, Phylogenetic analysis, Iran, Live Bird Marketing

# P919 - 50: THE PREVALENCE STUDY OF ANIMAL BITE IN THE WESTERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010-2015

Narges Babevey[1], Mehrdad Pooyanmehr[2]

1. -
2. -

**Background and Aim:** The prevalence rate of animal bites in Iran has been increasing in recent years. Annually 240 cases per 100.000 populations are estimated to occur in Iran. more than 85% of them are dog bites. This study was designed to investigate the prevalence rate and epidemiological aspects of animal bite in the Western Cities of Kermanshah Province (western part Iran), during 2010 – 2015.

**Methods:** Medical records in patients with Animal Bite (clinical information, pathological diagnosis of disease and the questionnaire included questions like, occupation, gender, age group, attacker animal, vaccination type, bite place on the body, type of dog bite, wild or domestic dog, and residential area) who had been operated in referral four Health Centers of the Western cities areas of Kermanshah province were collected. Data analysis was done by SPSS software using descriptive statistics.

**Results:** The total number of 1191 cases had been found that diagnosed as Animal Bite by clinical findings and pathological documentation in 4 cities medical centers registered. Ravansar 0.419%, Javanrood 0.169%, Pavehe 0.205% and Salasebabajany 0.398% patients at six years' period per 100,000 persons respectively.Seventy percent of the bites were from urban regions. The majority of cases were related to 9 – 25 years' age group (62.8%).About 93.3% of cases were injured by dogs. Furthermore, around 93.7% of animal bites treated by incomplete rabies prophylaxis regimen.

**Conclusion:** The dogs were the major attacker animal, affecting mostly the age group 9-25 years old and men. Therefore, we should pay more attention about controlling this problem.

**Keywords:** Prevalence Rate, Animal Bite, Western Cities, Kermanshah Province

# P920 - 59: A REPORT OF EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN THE NORTHERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN

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**Background and Aim:** Brucellosis is one of the important zoonotic disease constituting a public health problem worldwide. The aim of this study was to a report prevalence of Brucellosis among people in the Northern Cities Area of Kermanshah Province during six years.

**Methods:** In this study were examined only patients with a positive result in diagnostic tests in the years of 2010-2015 were reported. medical records of infected in patients with Brucellosis were studied. Factors Para clinic information such as tests Wright – Combs and age - gender-work with animals the kind of contact with animals, consumption unpasteurized dairy products, who had been operated in Health Centers of the northern cities areas of Kermanshah province were collected. Generally, only 1756 positive patients (653female and 1103 male) serum specimens that collected in Health centers laboratories (six years) were used in Coombs Wright Brucellosis test (serum titer of ≥ 1:80 is positive for brucellosis).

**Results:** Total Patients were 1756 persons. the age of 15 to 70 were the highest rate of infection 1.103% of men and 0.653% of the patients were women per 100.000 persons. The people were villager 69.8% and 30.2% were townspeople.69.8% of the patients had a history of direct contact with their animal and livestock Consumption of unpasteurized dairy products were found in 87.43% of cases.

**Conclusion:** The results of this study show that infectious animals must be control for prevention of disease. It is concluded that screening of brucellosis is necessary in our population for basic programming.

**Keywords:** Seroprevalence, Brucellosis, Northern Cities Area

# P921 - 62: A REPORT PREVALENCE CUTANEOUS LEISHMANIASIS IN THE KERMANSHAH PROVINCE , WEST OF IRAN, DURING 2010- 2015

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**Background and Aim:** Leishmaniosis is one of the most important tropical diseases and zoonotic infection. Natural transmission of Leishmania parasites is carried out by biting of female sandflies genus Phlebotomus from reservoir hosts to human (caused by obligate intracellular protozoa of the genus Leishmania). There are three forms of leishmaniosis: Cutaneous leishmaniosis (CL, rural and urban), visceral leishmaniosis (VL) and mucocutaneous leishmaniosis(MCL). Cutaneous leishmaniosis only causes ulcers on skin. In past ten years, prevalence and incidence of leishmaniosis remarkably increased in many regions of Iran.

**Methods:** The data were taken from internal reports of Health Center of Kermanshah City in the period six years (2010-2015). One Thousand One Hundred Seventeen patients with CL were included in this study. The diagnosis of CL was based on clinical, Para Clinical findings and microbiologic procedures on chronic (Non-Healing) skin lesions. Laboratoreis Health Centers Kermanshah Province confirmed of the diagnosis for detecting Leishmania parasites in infected tissue (through light-microscopic examination of stained specimens, culture techniques and molecular methods).

**Results:** Results indicated that All 1117 patients' referent were who diagnosed as CL. The clinical presentation of CL was typical in 1117 patients in 2010 (0.087%),2011 (0.126%), 2012 (0.167%) , 2013(0.061%), 2014(0.306%) and 2015 (0.370%) per 100.000 persons, by clinical , para clinical findings and pathologic documentation in medical center registries patients at six years' period respectively.

**Conclusion:** CL is a very contagious and important infectious disease worldwide. The diagnosis of CL may be difficult, especially in atypical presentations and Non-endemic areas. Thus, CL should be kept in mind, especially in many regions of Iran.

**Keywords:** Zoonotic, cutaneous, leishmaniosis

# P922 - 65: A SURVAY EPIDEMIOLGICAL CUTANEOUS LEISHMANIASIS IN THE KERMANSHAH CITY OF WEST IRAN, DURING 2010- 2015

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2. Veterinary Student, Faculty of Veterinary Medicine, Razi University
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**Background and Aim:** Leishmaniosis is one of the most important tropical diseases and zoonotic infection. Natural transmission of Leishmania parasites is carried out by biting of female sandflies genus Phlebotomus from reservoir hosts to human (caused by obligate intracellular protozoa of the genus Leishmania). There are three forms of leishmaniosis: Cutaneous leishmaniosis (CL, rural and urban), visceral leishmaniosis (VL) and muco cutaneous leishmaniosis(MCL). Cutaneous leishmaniosis only causes ulcers on skin. In past ten years, prevalence and incidence of leishmaniases remarkably increased in many regions of Iran.

**Methods:** The data were taken from internal reports of Health Center of kermanshah City in the period six years (2010-2015). 359 patients with CL were included in this study. The diagnosis of CL was based on clinical, Para Clinical findings and microbiologic procedures on chronic (Non-Healing) skin lesions. Laboratory Health Center Kermanshah City confirmed of the diagnosis for detecting Leishmania parasites in infected tissue (through light-microscopic examination of stained specimens, culture techniques and molecular methods).

**Results:** Results indicated that All patient's referent 359 patients were who diagnosed as CL. The clinical presentation of CL was typical in 359 patients in 2010 (0.028%),2011 (0.033%), 2012 (0.023%) ,2013(0.015%), 2014(0.120%) and 2015 (0.140%) per 100.000 persons by clinical, para clinical findings and pathologic documentation in medical center registries patients at six years' period respectively.

**Conclusion:** CL is a very contagious and important infectious disease worldwide. The diagnosis of CL may be difficult, especially in atypical presentations and Non-endemic areas. Thus, CL should be kept in mind, especially in many regions of Iran.

**Keywords:** Zoonotic, cutaneous, leishmaniosis

# P923 - 66: SURVEY EPIDEMIOLOGICAL OF ANTHRAX IN KERMANSHAH CITY , WEST IRAN DURING 2010- 2015

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**Background and Aim:** Anthrax is a potentially fatal zoonotic disease and is a important zoonotic disease which is primarily a job-related infection caused by Bacillus anthracis. Aim this study, anthrax cases seen between in Kermanshah City of Kermanshah Province.

**Methods:** Medical records of infected in patients with CA (Clinical, Para clinical information and pathological diagnosis of disease CA such as microbiologic procedures) who had been operated in referral Health Center were collected in the period six years . two patients with CA were included in this study.

**Results:** Results indicated that All patients' referent two patients were who diagnosed CA in medical center,2013 two (0.002%), patient at six years' period per 100,000 persons. Each tow patients with a diagnosis of CA were followed up. two patients had a history of animal contact. The clinical presentation of CA was typical in 2 patients also one patients were initially misdiagnosed with insect bites and one patient with angioedema. Cultures from the lesions were positive for Bacillus anthracis in two cases. Gram stain from the lesions revealed Gram-positive rods in two cases. Patients were diagnosed by clinical presentation and a history of contact with sick animals or contaminated animal products.

**Conclusion:** CA is a very contagious and important infectious disease worldwide. Early and accurate diagnosis dramatically affects the prognosis of the disease. The diagnosis of CA may be difficult, especially in atypical presentations and non-endemic areas. Thus, CA should be kept in mind, especially in these situations.

**Keywords:** Anthrax, Zoonotic, Kermanshah

# P924 - 67: SURVEY EPIDEMIOLOGICAL OF BRUCELLOSIS IN KERMANSHAH CITY,WEST IRAN

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**Background and Aim:** Brucellosis is one of the most important zoonotic disease constituting a public health problem worldwide. The aim of this study was to a report prevalence of Brucellosis among people In Kermanshah City the West of Iran Kermanshah Province during six years.

**Methods:** In this study were examined only patients with a positive result in diagnostic tests in the years of 2010-2015 were reported. medical records of infected in patients with Brucellosis were studied. Factors such as tests Wright – Combs and age - gender- work with animals the kind of contact with animals, consumption unpasteurized dairy products, who had been operated in Health Center Kermanshah City were collected. Generally, only 1600 positive patients (761female and 839 male) serum specimens that collected in Health center laboratory (six years) were used in Coombs Wright Brucellosis test (In this test, serum titer of ≥ 1:80 is positive for brucellosis).

**Results:** Total Patients were 1600 persons. the age of 15 to 65 were the highest rate of infection 0.839% of men and 0.761% of the patients were women per 100.000 persons. In 2010(0.108 %),2011(0.175%),2012(0.165%), 2013(0.384%),2014(0,399 %) and 2015(0.405%) years, per 100.000 persons. The people were villager 58.8% and 41.2% were townspeople.58.8% of the patients had a history of direct contact with their animal and livestock. Consumption of unpasteurized dairy products were found in 78.43% of cases.

**Conclusion:** The results of this study show that infectious animals must be control for prevention of disease. It is concluded that screening of brucellosis is necessary in our population for basic programming.

**Keywords:** Seroprevalence, Brucellosis, Kermanshah

# P925 - 68: SURVEY EPIDEMIOLOGICAL OF HYDATID CYSTS IN KERMANSHAH CITY, WEST IRAN

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**Background and Aim:** Hydatidosis is the most important zoonotic disease, a public health problems in many areas of the world and Iran, that caused by the larval stage of Echinococcus .This study was conducted to evaluate Humans hydatid cysts.

**Methods:** This is a retrospective study applied for five years (2011 - 2015). medical records of infected in patients with hydatid cysts (Para clinical information such as MRI, ultrasound, CT Scan and pathological diagnosis) who had been operated referral in Health Center of the Kermanshah City were collected.

**Results:** Results indicated that All patient's referent 15 patients, were who diagnosed as hydatid cysts by clinical, radiological findings and pathologic documentation in 2011(0.004%), 2012(0.008%), 2013(0.001%) 2014(0.001%) 2015(0.001%) per 100,000 persons at five years' period.

**Conclusion:** West of Iran is an endemic situation for Hydatidosis. The Prevalence rate of hydatid cysts in areas was reported in the relatively populations of 100,000people. Survey and further studies about the rate of infection and complications in this regions at comparison with other regions of province are required to determine the factors risk of Hydatidosis in this areas.

**Keywords:** Epidemiological , Hydatid, Cysts, Kermanshah

# P926 - 71: STUDY OF PREVALENCE CUTANEOUS LEISHMANIASIS IN THE NORTHERN AREAS OF KERMANSHAH PROVINCE ,WEST IRAN DURING 2010-2015

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**Background and Aim:** Leishmaniasis is one of the most important tropical diseases and zoonotic infection. Natural transmission of Leishmania parasites is carried out by biting of female sandflies genus Phlebotomus from reservoir hosts to human.There are three forms of leishmaniases: Cutaneous leishmaniasis (CL, rural and urban ) , visceral leishmaniasis (VL) and mucocutaneous leishmaniasis(MCL) . Cutaneous leishmaniasis only causes ulcers on skin. In past ten years, prevalence and incidence of leishmaniases remarkably increased in many regions of Iran.

**Methods:** The data were taken from internal reports of Health Centers northern Cities areas of kermanshah province (Kangavar, Harsin, Sahneh and Sonqor) in the period six years (2010-2015). Eighty eight patients with CL were included in this study. The diagnosis of CL was based on clinical, Para Clinical findings and microbiologic procedures on chronic (Non-Healing) skin lesions. Laboratories Health Centers Four City confirmed of the diagnosis for detecting Leishmania parasites in infected tissue (through light-microscopic examination of stained specimens, culture techniques and molecular methods).

**Results:** Results indicated that All 88 (0.088%) patients referent were who diagnosed as CL. The clinical presentation of CL was typical in 88 patients in Kangavar (0.047%),Harsin (0.017%), Sahneh(0.018%) and Songhor (0.006%) per 100.000 persons by clinical,paraclinical findings and pathologic documentation in 4 cities medical center registries patients at five years period respectively.

**Conclusion:** CL is a very contagious and important infectious disease worldwide. The diagnosis of CL may be difficult, especially in atypical presentations and nonendemic areas. Thus, CL should be kept in mind, especially in many regions of Iran.

**Keywords:** Zoonotic, cutaneous, leishmaniasis

# P927 - 75: SURVEY EPIDEMIOLOGICAL OF HYDATID CYSTS IN KERMANSHAH PROVINCE , WEST IRAN

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**Background and Aim:** Hydatidosis is the most important zoonotic disease, a public health problem in many areas of the world and Iran, that caused by the larval stage of Echinococcus. This study was conducted to evaluate Humans hydatid cysts.

**Methods:** This is a retrospective study applied for five years (2011 - 2015). medical records of infected in patients with hydatid cysts (Para clinical information such as MRI, ultrasound, CT Scan and pathological diagnosis) who had been operated referral in all Health Centers in province of Kermanshah were collected.

**Results:** Results indicated that All patients' referent 15 patients, were who diagnosed as hydatid cysts by clinical, radiological findings and pathologic documentation in 2011(0.028%), 2012(0.002%), 2013(0.015%) 2014(0.017%) 2015(0.016%) per 100,000 persons at five years' period.

**Conclusion:** West of Iran is an endemic situation for Hydatidosis. The Prevalence rate of hydatid cysts in areas was reported in the relatively populations of 100,000 people. Survey and further studies about the rate of infection and complications in this regions at comparison with other regions of province are required to determine the factors risk of Hydatidosis in this areas.

**Keywords:** Epidemiological study, Hydatid Cysts, Kermanshah province

# P928 - 79: COMPARISON OF SEVERAL DIAGNOSTIC METHODS FOR DETECTING BOVINE VIRAL DIARRHEA VIRUS INFECTION IN CATTLE

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**Background and Aim:** Bovine viral diarrhea virus is one of the most important viral pathogens of cattle worldwide caused by Pestivirus genus, Flaviviridae family. The aim of the present study was to comparison diagnostic methods and determines the prevalence of BVDV infection for the first time in dairy herds of Fars province, Iran.

**Methods:** In this regard, from 400 calves and cows blood samples were collected from 12 dairy herds and, analyzed using the diagnostic methods included; antigen capture ELISA on serum samples and PCR on buffy coats. In addition, in the second step, blood samples and ear notch biopsies were also collected from 100 calves and cows infected or suspected to BVD, and tested by ELISA on serum and skin biopsies, RT-PCR on buffy coat and IHC on skin biopsies.

**Results:** Results of early molecular and serological tests confirmed infection of 4% dairy cows from 8 dairy herds. In addition, the results of ELISA and RT-PCR on serum and buffy coat, IHC and ELISA on skin tissues were showed persistent infection (PI) in 2% of the examined cattle. BVDV-1 and BVDV-2 genotypes were detected in 1.5% and .5% cows, respectively. The correlation between results of ELISA, RT-PCR and IHC in the present study was 100%. The immunostaining of skin tissues showed the presence of BVDV antigen in 2% of samples. In IHC, finely brown cytoplasmic granules were observed in the cytoplasm of the epithelial cells of epidermis and hair follicles.

**Conclusion:** The rates of acute and persistent infection of BVDV were 4% and 2% respectively.

**Keywords:** Bovine viral diarrhea virus, persistent infection, ELISA, RT-PCR, immunohistochemistry

# P929 - 91: A REPORT PREVALENCE ANTHRAX IN THE NORTHERN CITIES AREA OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015

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**Background and Aim:** Zoonotic diseases constitute a public health problem throughout the world. Anthrax is a potentially fatal zoonotic disease and is an important zoonotic disease which is primarily a job-related infection caused by Bacillus anthracis.

**Methods:** Medical records of infected in patients with CA (Clinical, Para clinical information and pathological diagnosis of disease CA such as microbiologic procedures) who had been operated in referral Health Centers northern cities areas of Kermanshah province (Kangavar, Harsin, Sahneh and Songhor) were collected in the period six years (2010 – 2015). fourteen patients with CA were included in this study.

**Results:** Results indicated that All patient's referent 14 patients were who diagnosed CA in 4 cities medical center registries, (Kangavar 0, Harsin 0, Sahneh 2 and Songhor 12 patients) at six years' period, per 100,000 (0.14%) person respectively. Each 14 patients with a diagnosis of CA were followed up. 14 patients had a history of animal contact. The clinical presentation of CA was typical in 14 patients in 2010 (3 case), 2011 (1 case), 2012(4case) and 2013 (4case) in songhor also 2011 (1case) and 2012 (1case) in sahneh, respectively. Cultures from the lesions were positive for Bacillus anthracis in 14 cases. Gram stain from the lesions revealed Gram-positive rods in 14 cases. Patients were diagnosed by clinical presentation and a history of contact with sick animals or contaminated animal products.

**Conclusion:**The diagnosis of CA may be difficult, especially in atypical presentations and non-endemic areas. Thus, CA should be kept in mind, especially in these situations.

**Keywords:** anthrax, Zoonotic, Kermanshah

# P930 - 123: A REPORT PREVALENCE CUTANEOUS LEISHMANIASIS IN THE KERMANSHAH PROVINCE,WEST OF IRAN, DURING 2010- 2015

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**Background and Aim:** Leishmaniosis is one of the most important tropical diseases and zoonotic infection. Natural transmission of Leishmania parasites is carried out by biting of female sandflies genus Phlebotomus from reservoir hosts to human (caused by obligate intracellular protozoa of the genus Leishmania). There are three forms of leishmaniosis: Cutaneous leishmaniosis (CL, rural and urban), visceral leishmaniosis (VL) and mucocutaneousleishmaniosis(MCL).Cutaneous leishmaniosis only causes ulcers on skin. In past ten years, prevalence and incidence of leishmaniosis remarkably increased in many regions of Iran.

**Methods:** The data were taken from internal reports of Health Centerof KermanshahCity in the period six years (2010-2015). One Thousand One Hundred Seventeen patients with CL were included in this study. The diagnosis of CL was based on clinical,Para Clinical findings and microbiologic procedures on chronic (Non-Healing) skin lesions. Laboratoreis Health Centers Kermanshah Province confirmed of the diagnosis for detecting Leishmania parasites in infected tissue (through light-microscopic examination of stained specimens, culture techniques and molecular methods).

**Results:** Results indicated that All 1117patients'referent were who diagnosed as CL. The clinical presentation of CL was typical in 1117 patients in 2010 (0.087%),2011(0.126%), 2012 (0.167%) ,2013(0.061%), 2014(0.306%) and 2015(0.370%) per 100.000 persons,by clinical, paraclinical findings and pathologic documentation in medical center registries patients at sixyears' periodrespectively.

**Conclusion:** CL is a very contagious and important infectious disease worldwide. The diagnosis of CL may be difficult, especially in atypical presentations and Non-endemic areas. Thus, CL should be kept in mind, especially in many regions of Iran.

**Keywords:** Zoonotic, cutaneous, leishmaniosis, Kermanshah

# P931 - 129: A REPORT OF SEROPREVALENCE BRUCELLOSIS IN SOUTH WEST CITIES AREAS OF KERMANSHAH PROVINCE, DURING 2010- 2015

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**Background and Aim:** Brucellosis is one of the most important zoonotic disease constituting a public health problem worldwide. The aim of this study was to a report prevalence of Brucellosis among people South West Cities of Kermanshah Province of Iran during six years.

**Methods:** Medical records of infected in patients with Brucellosis were studied. Factors Para clinic information such as tests Wright – Combs and age - gender- work with animals the kind of contact with animals, consumption unpasteurized dairy products, who had been operated in Health Centers of the south west cities areas of Kermanshah province (Eslamabad ,Dalahou ,Sarpolzahb ,Gilangharb and Ghasreshirin) were collected. Generally,only 2233positive patients (985 female and 1248 male) serum specimens that collected in Health centers laboratories (six years) were used in Coombs Wright Brucellosis test (In this test, serum titer of ≥ 1:80 is positive for brucellosis).

**Results:** Total Patients were 2233 persons. the age of 20 to 60 were the highest rate of infection 1.248% of men and 0.985% of the patients were women per 100.000 persons. The people were villager 70.8% and 29.2% were townspeople. 70.8% of the patients had a history of direct contact with their animal and livestock. Consumption of unpasteurized dairy products were found in 93.33% of cases.

**Conclusion:** The results of this study show that patients had a history of Consumption unpasteurized dairy products, direct contact with animal and livestock. Therefore infectious animals must be control for prevention of disease. It is concluded that screening of brucellosis is necessary in our population for basic programming.

**Keywords:** Seroprevalence, Brucellosis, Kermanshah

# P932 - 130: A REPORT PREVALENCE ANTHRAX IN SOUTH WEST CITIES AREAS OF KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015

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**Background and Aim:** Zoonotic diseases constitute a public health problem throughout the world. Anthrax is a potentially fatal zoonotic disease and is an important zoonotic disease which is primarily a job-related infection caused by Bacillus anthracis.

**Methods:** Medical records of infected in patients with CA (Clinical, Para clinical information and pathological diagnosis of disease CA such as microbiologic procedures) who had been operated in referral Health Centers northern cities areas of Kermanshah province were collected in the period six years . seven patients with CA were included in this study.

**Results:** All patient's referent 7 patients were who diagnosed CA in 5 cities medical center registries, (Islamabad 0, Dalahou 5, Sarpolezahab 1, Gilangharb 1 and Ghasreshirin 0 patients) at six years' period respectively, per 100,000 (0.007%) person. Each 7 patients with a diagnosis of CA were followed up. 7 patients had a history of animal contact. The clinical presentation of CA was typical in 7 patients in 2011 (1 case), 2012 (2case) 2013 (1case) and 2014 (1case) in Dalahou also in Gilangharb 2011 (1case) and 2014 (1case) in Sarpolezahb, respectively. Cultures from the lesions were positive for Bacillus anthracis in 7 cases. Gram stain from the lesions revealed Gram-positive rods in seven cases. Patients were diagnosed by clinical presentation and a history of contact with sick animals or contaminated animal products.

**Conclusion:** CA is a very contagious and important infectious disease worldwide. The diagnosis of CA may be difficult, especially in atypical presentations and non-endemic areas. Thus, CA should be kept in mind, especially in these situations.

**Keywords:** Bacillus, anthracis, Zoonotic

# P933 - 131: SURVEY EPIDEMIOLOGICAL OF ANTHRAX IN KERMANSHAH PROVINCE, WEST IRAN DURING 2010- 2015

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**Background and Aim:** Zoonotic diseases constitute a public health problem throughout the world. Anthrax is a potentially fatal zoonotic disease and is an important zoonotic disease which is primarily a job-related infection caused by Bacillus anthracis. The diagnosis of cutaneous anthrax (CA) may be very difficult, particularly in atypical presentations and non-endemic regions.

**Methods:** Medical records of infected in patients with CA (Clinical, Para clinical information and pathological diagnosis of disease CA such as microbiologic procedures) who had been operated in referral all Health Centers Kermanshah Province were collected in the period six years .Patients were diagnosed by clinical presentation and a history of contact with sick animals or contaminated animal products.

**Results:** Results indicated that All patients' referent Twenty-five patients were who diagnosed CA in medical center registries, 2010(3case), 2011 (4case), 2012 (7case), 2013(7case), 2014(3case) and 2015(1case) patient) at six years' period (0,025%), per 100,000 persons respectively. Each Twenty-five patients with a diagnosis of CA were followed up. all patients had a history of animal contact. The clinical presentation of CA was typical in all patients were initially misdiagnosed with insect bites or angioedema. Cultures from the lesions were positive for Bacillus anthracis in Twenty-five cases. Gram stain from the lesions revealed Gram-positive rods in 25 cases.

**Conclusion:** CA is a very contagious and important infectious disease worldwide. The diagnosis of CA may be difficult, especially in atypical presentations and non-endemic areas. Thus, CA should be kept in mind, especially in these situations.

**Keywords:** Anthrax, Zoonotic, Kermanshah

# P934 - 132: SURVEY EPIDEMIOLOGICAL OF BRUCELLOSIS IN PROVINCE KERMANSHAH , WEST OF IRAN

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**Background and Aim:** Brucellosis is one of the most important zoonotic disease constituting a public health problem worldwide. Brucellosis is usually associated with the consumption of unpasteurized milk and soft cheeses made from infected animals.

**Methods:** In this study were examined only patients with a positive result in diagnostic tests in the years of 2010-2015 were reported. medical records of infected in patients with Brucellosis were studied. Factors Para clinic information such as tests Wright – Combs and age - gender-work with animals the kind of contact with animals, consumption unpasteurized dairy products, who had been operated in all Health Centers of Kermanshah province were collected. Generally, only 5942 positive patients (2154 female and 3788 male) serum specimens that collected in all Health centers laboratories (six years) were used in Coombs Wright Brucellosis test (In this test, serum titer of ≥ 1:80 is positive for brucellosis).

**Results:** Total Patients were 5942 persons. the age of 15 to 75 were the highest rate of infection 3.788% of men and 2.154% of the patients were women per 100.000 persons. In 2010(0.712 %),2011(0.777%),2012(0.763%), 2013(1.055%),2014(1.252 %) and 2015(1.380%) years, per 100.000 persons. The people were villager 69.8% and 30.2% were townspeople.69.8% of the patients had a history of direct contact with their animal and livestock. Consumption of unpasteurized dairy products were found in 96.53% of cases.

**Conclusion:** The results of this study show that infectious animals must be control for prevention of disease. It is concluded that screening of brucellosis is necessary in our population for basic programming.

**Keywords:** prevalence, Brucellosis, Kermanshah

# P935 - 133: SURVEY OF SEROPREVALENCE OF BOVINE VIRAL DIARRHEA (BVD) IN WEST REGION OF KERMANSHAH PROVINCE USING ELISA METHOD

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**Background and Aim:** Bovine-viral diarrhea (BVD) is a worldwide distributed infectious disease of cattle caused by the bovine-viral diarrhea virus (BVDV), a member of the Pestivirus genus, within the Flaviviridae family. BVDV has been isolated from cattle showing a variety of clinical signs, such as transient fever, diarrhea, respiratory symptoms, mucosal disease and abortion. The aim of this study was to determine the seroprevalence of Bovine viral diarrhea (BVD) in west region of Kermanshah province.

**Methods:** A total of 146 dairy cows were investigated. The cows were selected based on cluster random sampling. Peripheral blood aseptically from the jugular vein was obtained and then drawn in sterile vacuum tubes without anticoagulant. The blood samples were centrifuged for 10 minutes at 2,000 rpm, and then, the obtained serums were stored at − 20°C until further analysis. The cows divided into five groups: 1 to 6 (G1), 6 to 12 (G2), 12 to 18 (G3), 18 to 24 months (G4) and more than 24 months (G5). Sera samples were tested using a c-ELISA kit (IDVET, France) according to the manufacturer's instructions for inspecting specific antibodies of BVDV.

**Results:** The average rate of BVDV infection in all samples was 14.65%. The highest rate of infection was to G5 (19.86%). The rate of infection in groups of G1, G2, G3, and G4 were 17.12%, 8.22%, 13.01%, and 15.06%, respectively.

**Conclusion:** Further studies about the prevalence of this virus in other areas are needed to increase the knowledge on its epidemiology.

**Keywords:** Bovine viral diarrhea virus, Prevalence, c-ELISA

# P936 - 139: ANTIBIOTIC RESISTANCE PATTERN OF SALMONELLA SPP. AND ESCHERICHIA COLI SEROVARS ISOLATED FROM SHELLFISHES IN WEST-AZERBAIJAN PROVENANCE

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**Background and Aim:** Salmonella and Escherichia coli serovars are major zoonotic pathogens that cause gastrointestinal disease in human along with the high prevalence of antimicrobial resistance. The aim of this study was to determine the prevalence and antibiotic resistance patter of Salmonellaspp. and E. coli serovars isolates from shellfishes in West-Azerbaijan provenance.

**Methods:** Microorganisms were isolated and identified from shellfish through physiological, biochemical tests according to the methods described in the Bacteriological Analytical Manual of the Food and Drug Administration. The antibiotic resistance pattern of S.paratyphi A, S.typhi and E.coli isolates from 60 samples of Astacus Leptodactylus and Macrobrachium rosenbergii collected from two known Aras and Hassanlo dams located in West-Azerbaijan provenance in 2016 and were screened by Kirby-Bauer disc diffusion susceptibility test to a panel of 15 different antibiotics.

**Results:** Antimicrobial resistance pattern of S.paratyphi A was amoxicillin(100%), neomycin(83.33%), erythromycin(100%), gentamycin(66.66%), cephalexin (73.33%), tylosin(100%), for S.typhi was amoxicillin (100%), erythromycin(100%), tylosin(100%), cephalexin (33.33%) and for E.coli was colistin(50%), amoxicillin (100%), neomycin(66.66%), erythromycin (100%), tylosin(100%),cefalexin(100%), lincospectin (50%). No Salmonellaspp. and E.coli isolates were resistant to ciprofloxacin, tetracyclines, florfenicol and sultrim.

**Conclusion:** This study indicated that bacteria isolated from the meat of two cultured shellfish samples were resistant to multiple human used antibiotics, presumably due to contamination of water behind the dams with human and livestock sewage. In order to reduce consumption of contaminated shellfish and prevention horizontal and mechanical transmission of this zoonotic microorganism, regular epidemiologic surveillance works on cultured fish and shellfish must take account of the national public health program.

**Keywords:** Antibiotic resistance, Crayfish, Isolation, Salmonella spp., Escherichia coli

# P937 - 148: PHYLOGENETIC GROUP DETERMINATION OF ESCHERICHIA COLI ISOLATED FROM BROILERS WITH COLIBACILLOSIS IN POULTRY FARMS OF ILAM CITY, IRAN

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**Background and Aim:** Avian pathogenic Escherichia coli (APEC) are the aetiological agents of colibacillosis – a complex syndrome characterized by multiple organ lesions like air sacculitis, pericarditis, peritonitis, salpingitis, synovitis, osteomyelitis or yolk sac infection. Despite being known for over a century, avian colibacillosis remains one of the major endemic diseases afflicting the poultry industry worldwide. Escherichia coli strains can be assigned to one of the four main phylogenetic groups, A, B1, B2 and D, according to the combination of the three genetic markers chuA, yjaA and DNA fragment TspE4.C2. Distinct studies have demonstrated that these phylo-groups differ in the presence of virulence factors, ecological niches and life-history. Therefore, the aim of this work was to analyze Phylogenetic group determination of Escherichia coli isolated from broilers with colibacillosis in poultry farms of Ilam City, Iran.

**Methods:** In this cross-sectional study, 150 E. coli isolates were collected from avian colibacillosis. The E. coli isolates were confirmed by biochemical tests. Phylogenetic grouping was done based on the Clermont triplex PCR method using primers targeted at three genetic markers, chuA, yjaA and TspE4.C2.

**Results:** PCR assays showed that the 150 isolates distributed in four phylogenetic groups, which 11 isolates in A (7.4%), 10 isolates in B1 (6.7%), 56 isolates in B2 (37.4%) and 73 isolates in D (48.7%) phylogenetic group. The isolates belonged to 6 phylogenetic subgroups, which the most prevalent was D2 (64 isolates) and the least prevalent was B1-1 (6 isolates) subgroups.

**Conclusion:** These findings increased our knowledge about of characteristics of Iranian E. coli isolates originated from avian colibacillosis.

**Keywords:** Avian colibacillosis, Escherichia coli, Phylogenetic grouping

# P938 - 167: REVIEW ANTIBACTERIAL EFFECTS OF METHANOL EXTRACTS OF PLANT DRUGS, EUCALYPTUS GLOBULUS AND QUERCUS CASTANEIFOLIA ON BACTERIUM LACTOCOCCUS GARVIEAE IN INVITRO CONDITION.

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**Background and Aim:** The bacterium Lactococcus garvieae is one of the most species of Lactococcus sexes that has caused irreparable damages to the rainbow trout breeding industry in Iran.

**Methods:** In this study, bacterium L.garvieae that already had been extracted from rainbow breeding farms in Charmahalobakhtiari state and verified by PCR method in laboratory were used. Also, in this study, the used extracts were the methanol extracts of Eucalyptus globulus and Quercus castaneifolia plant. The antibacterial effects of methanol extracts were studied by disk diffusion and serial dilution methods in 1.25, 2.5, 5, 10 and 20 concentrations and 3 repeated for each concentration per plant in order to determine disc diffusion , MIC and MBC of each plant extract was located.

**Results:** Minimum growth inhibition concentration (MIC) was releted to Eucalyptus globulus 10 mg/ml And medicinal plant Maso 20 mg/ml. while the minimum bacterial concentration (MBC) in Eucalyptus plant is 20 mg/ml concentration. maximum halo diameter of bacterial growth inhibition in studied groups has been 30 mm and in concentration of ethanol extract of Eucalyptus 20 mg/ml.

**Conclusion:** Based on the results of this study, the effects of both studied extracts in halo diameter of bacteria growth inhibition, MIC and MBC have statistically significant difference with the effect of erythromycin antibiotic. The results obtained from the above research can be said with more study on active ingredients in the two mentioned extracts which have powerful antibacterial effects can reveal the way to the attainment of new compounds to treat disease is caused Lactoccocus garvae bacteria.

**Keywords:** antibacterial, Eucalyptus globulus , Quercus castaneifolia, Lactococcus garvie

# P939 - 168: COMPARISON BETWEEN ANTIFUNGAL EFFECT OF ETHANOLIC EXTRAC OF CINNAMOMUM ZEYLANICUM L. , BERBERIS VULGARIS L, MYRTUS COMMONIS L AND GARLIC WITH CANDIDA ALBICANS AND MALASEZIA FURFUR

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**Background and Aim:** Dermathophytes are a special group of fungus that can attack to epidermal layer of skin, hair,... in human and animal and can creat super facial infections. Although these days a lot of antifungaldrugs are available but still in this course progress in needed. Because of problems that create with syntetic drugs like side effects, creating rigidity and low effect drugs, coming back to nature and special medicinal plants is necessary.

**Methods:** In this study standard strain of candida albicansACTT10231and malasezia furfur were cultured in dextrose agar, after that various amount of ehanolic extract of this plants were added to these cultures.

**Results:** Results of this study were in this way: in this study MIC of candida albicans and malasezia furfur for Berbers vulgaris L extraction was 10mg/ml for candida albicans and3.5 mg/ml for malasezia furfur. About cinnamomum zeylanicum Extraction it was1.25 mg/ml for candida albicans and0.8mg/ml for malasezia furfur. About myrtus commonis L Extraction it was11mg/ml for candida albicansand 7.3mg/ml for malasezia furfur. About garlic Extraction it was0.07mg/ml for candida albicans and 0.02mg/ml for malasezia furfur.about floconazol drug it was3.6micrigr/ml for candida albicans and0.2mg/ ml for malasezia furfur and about ketoconazol for both of them it was2.3micrigr/ml.

**Conclusion:** Among plants being studied, ethanolic extract of garlic, myrtus commonis,Berberis vulgaris.L and cinnamomum zeylanicum L had greater inhibitory activity against Candida albicans Garlic, and and cinnamomum zeylanicum.Lshowed better inhibitory effect than ketoconazol Because of the antimicrobial effects of some me dical plants.

**Keywords:** medicinal plants, malasezia furfur, candida albicans

# P940 - 172: THE PREVALENCE OF SARCOCYSTIS SPP. MICROCYSTS IN ESOPHAGUS TISSUE OF SHEEP REFERRED TO SEMNAN ABATTOIR

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**Background and Aim:** Sarcocystis is an obligatory protozoan parasite, which needs two different hosts in its life cycle. There are some different species which can be infected various animals and two species (Sarcocystis hominis and Sarcocystis suihominis) have zoonotic importance. The objective of this research is to determine the prevalence of micro-sarcocysts among sheep as a food source of human.

**Methods:** Samples (107 sheep's esophagi) were collected randomly from industraial abattoir of Semnan. Samples were processed by the compress method. The processed samples were fixed by methanol and stained by Giemsa, and then Sarcocystis bradyzoites were observed by 100x objective lens of light microscope.

**Results:** In this study 37 out of 107 (34.58%), (25.6-43.6%; 95% CI) were positive in micro-sarcocysts.

**Conclusion:** This result can be compared with other data in Iran and it can be concluded that the meat inspection policy about Sarcocystis infection should be changed. Microcysts and differential diagnosis of Sarcocystis and Hammondia infections are also considered in meat inspection. Molecular diagnosis of the Sarcocystis species is the best way of Sarcocystis diagnosis. It is recommended that decision of carcass condemnation will be done after species diagnosis.

**Keywords:** Sarcocystis, Sheep, Semnan, Iran

# P941 - 212: THE CONTRAINDICATED OF LIME IN AGRICULTURAL ANTHRAX DISINFECTION PROCEDURES: THE POTENTIAL ROLE OF CALCIUM IN THE PRESERVATION OF ANTHRAX SPORES

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**Background and Aim:** Bacillus anthracis is the causative agent of anthrax, a serious and often fatal zoonosis. Central to the persistence of anthrax in an area is the ability of B. anthracis to form long-lasting, highly resistant spores. Although, previously, lime (calcium oxide) was recommended as an anthrax disinfectant, the aim of this paper is to give a general view on the danger of lime disinfection in agricultural anthrax situations.

**Methods:** B. anthracis spores are enriched with metallic ions, and calcium as the most advantageous one which may be taken up from the sporulation environment and incorporated into the various layers of the spore. In the core, calcium is in combination with dipicolinic acid, forms a salt lattice that stabilizes the DNA and enzymes. This component is essential in the maintenance of dormancy and the thermo-resistance properties of the spore and spore integument.

**Results:** As calcium increases the resilience of B. anthracis spores, therefore, the use of lime in agricultural anthrax disinfection, rather than destroying the spores, may actually aid in their long-term preservation. As well, lime provides spores with the basic (high pH) environment that is optimal for calcium enrichment. The addition of lime to a putrefying, and thus heat producing, carcass may be especially problematic, since high temperature is another catalyst for calcium absorption.

**Conclusion:** Lime (or any other calcium containing compound) ought not to be used as the calcium residue that actively encourages spore preservation. It is no longer recommended the use of lime as an agricultural disinfectant when dealing with anthrax.

**Keywords:** Anthrax, Lime, Disinfection

# P942 - 241: IDENTIFICATION OF FASCIOLA SPECIES BY PCR-RFLP ASSAY IN AZADSHAHER(GOLESTAN PROVINCE)

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**Background and Aim:** Today identification of Fasciola Species is very important. Fascioliasis one of the important diseases in animals and humans caused by genus Fasciola. This disease is increasing in Iran and the world. PCR-RFLP is one of the best ways of detecting Fasciola species. The aim of this research is to identification of Fasciola Species in Azadshaher City.

**Methods:** In this research worms were obtained from the liver of infected animals in slaughterhouse Aazashaher.DNA worms with phenol- chloroform method was extracted. fragment of ITS-1 genome was amplified and with TasI enzyme was utilized for amplified fragments.

**Results:** Out of 4 livers from infected sheep and Cattle 30worms including 18 Fasciola hepatica (60%), 12 Fasciola gigantica (40%) were identified.

**Conclusion:** This study shows that F. hepatica dominant species in Aazadshaher city, F. gigantica as well as also be found in the city.

**Keywords:** PCR,RFLP, Fasciola , ITS-1 and Azadshaher

# P943 - 303: PREVALENCE OF LIVER FLUKE INFECTIONS IN SLAUGHTERED ANIMALS IN PIRANSHAHR CITY, IRAN

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**Background and Aim:** Liver fluke (Fasciola hepatica and Dicrocoelium dendriticum ) is a widespread parasite of ruminants which can have significant economic impact on cattle production. We have studied the infection conditions of the slaughtered animals in Piranshahr is a city located in West Azarbaijan Province in northwest Iran from 2011 to 2015.

**Methods:** This study is a kind of descriptive study in which we have studied the infection conditions of the slaughtered animals in Piranshahr city during 2011-2015. Information was collected using a questionnaire and all of the data were analyzed using SPSS-21.

**Results:** According to collected results from 5717 sheeps, 7993 goats and also from 11773 cows, (1.6%), (0.52%) and (0.48%) have been infected to dicrocoeliosis and (11.61%), (3.4%) and (1.8%) have been infected to fasciolosis.

**Conclusion:** This study shows that sheeps are more infected than goats and cows to dicrocoeliosis(1.6%) and fasciolosis(11.61%). This study is representative of the necessity of more attention about the prevention and controlling of this disease in animals in order to decrease economical damages and possibility of transferring of this disease from animal to man.

**Keywords:** Liver fluke, Fasciola hepatica, Dicrocoelium dendriticum, Piranshahr city

# P944 - 307: IDENTIFICATION AND SURVEY OF GRAM-NEGATIVE INTESTINE BACTERIA IN POULTRY EGG-LAYING IN BAGHMALECK AREA

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**Background and Aim:** Gram-negative intestine (specially salmonella) are a globally widespread food-borne pathogen having major impact on public health and are zoonotic. contaminated meat and raw eggs are an important source to human infections.identify and determine the prevalence of bacteria in poultry helps to control diseases caused by it.

**Methods:** In 3 aviculture that inclusive 9coliseum, 545 samples were taken to isolate and Identification bacteria of cloac and stool poultry. samples were taken by swab of cloacal from chickens.and taken 25gr feaces from different places of each salon. Half of the samples was placed in selenit f culture.the oder half was placed in peptone water.after 24 hour culture on macconkey agar(37,24H).after survey productive colony.then do biochemical confirmation (IMVIG) for a final decision.

**Results:** Prevalence of Ecoli(%67/59),proteus(%8/3),kelebsiella(%2/7).salmonella infection not found. stoke will provide any bacteria for later study similar pcr, rapid tests(bbl) confirmation and serotyping.

**Conclusion:** The main objective was to investigate the salmonella in poultry.that result is negative.observing health and safety tip can control other gram-negative bacteria.becouse diseases reduce the production and occasionally cause disease in humans.

**Keywords:** survey, gram-negative, bacteria, poultry, baghmaleck

# P945 - 319: A SERO-EPIDEMIOLOGICAL STUDY OF BRUCELLOSIS IN DAIRY CATTLE FARMS OF KURDISTAN PROVINCE

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**Background and Aim:** Brucellosis is an infectious disease caused by various gram-negative bacteria of the genus Brucella. This disease is considered to be one of the most common zoonotic infections worldwide with major public health implications, but it is still classified as one of seven neglected zoonotic diseases by the World Health Organization (WHO). The purpose of this study was to determine the seroprevalence of brucellosis in dairy cattle farms of Kurdistan province.

**Methods:** Blood samples were taken by jugular venipuncture from 327 non-vaccinated dairy cows, between March 2015 and September 2016. The cows were selected based on cluster random sampling. The blood samples were centrifuged at 3,000g for 5 minutes and then, the obtained serums were stored at −20°C until processing. Rose Bengal plate test (RBPT) and competitive enzyme-linked immunosorbent assay (c-ELISA) were used in serial for detection of antibodies against Brucella species.

**Results:** Of the 327 cows tested in this study, 15 (4.59%) and 12 (3.67%) were seropositive to Brucella infection by RBPT and c-ELISA, respectively. According to age, the age group 3–6 years showed the highest seroprevalence by both RBPT (6.98%) and c-ELISA (5.77%). The lowest seroprevalence by both tests was obtained from cows of age group >6 years (1.8%).

**Conclusion:** The results of this study provides important information on epidemiology of brucellosis in dairy cattle farms of Kurdistan province and highlights the need for implementation of control measures and raising public awareness on zoonotic transmission of brucellosis.

**Keywords:** Brucellosis, c-ELISA, Rose Bengal, Zoonoses, Prevalence

# P946 - 355: MOLECULAR ANALYSIS OF GENE ENCODING SURFACE PROTEIN OMPL37 IN PATHOGENIC AND NON-PATHOGENIC LEPTOSPIRA ISOLATION

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**Background and Aim:** Leptospirosis is a zoonotic disease caused by pathogenic leptospires. Outer membrane protein OmpL37 binds to several extracellular matrix components and has an increased affinity for elastin. OmpL37 has novel preferential affinity for skin and aorta elastin, suggesting a role in a common route of transmission through abraded skin and exposed blood vessels. This aim of study was molecular analysis of gene encoding surface in pathogenic and non-pathogenic Leptospira isolation.

**Methods:** Thirty Leptospira strains from several geographical regions of Iran were used in this study. The serovars were inoculated into the selective culture medium (EMJH) and then the genomic DNA extracted by standard Phenol-chlorophorm method. The specific primers for amplifying ompl37gene were designed. Primer specificity and sensitivity of the DNA was confirmed by PCR.

**Results:** PCR amplification of the ompL37 gene using the designed primers resulted in a 996 bp in twenty- eight serovar tested. No PCR products were amplified from two non-pathogenic.

**Conclusion:** This finding confirms, ompL37 gene was highly conserved and it is essential for pathogenisity of leptospira strains. OmpL37 is a novel elastin-binding protein of pathogenic leptospira that may be promoting attachment of leptospira to host tissues. Our results showed that the ompL37 gene may be good candidate for detection of pathogenis leptospirosis.

**Keywords:** Leptospira, Outer membrane proteins, OmpL37 gene, molecular analysis, PCR

# P947 - 356: TYPING CLOSTRIDIUM PERFRINGENS IN IRAN, SYSTEMATIC REVIEWS STUDY

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**Background and Aim:** A systematic review study on the prevalence of types Clostridium perfringens C. perfringens) in Iran. C. perfringens is an anaerobic and spore-forming bacillus that most widely distributed bacteria in the environment. This bacterium is the most rapidly growing food borne pathogen and caused morbidity and mortality in human and animal. The C. perfringens is classified into five types based on the synthesis of four major lethal toxins.

**Methods:** By searching the database Iranmedex, SID (Database SID), Google Scholar, Scopus, Pubmed and ISI, articles in Iran was extracted.Data analysis using software STATA was used.

**Results:** Articles reviewed, the prevalence of type A was dominant (95%).

**Conclusion:** Due to the prevalence of type A than other types in Iran, it is suggested to controlling, researchers screening done and programs and policies the health of the increasing incidence and complications of the disease prevented comes.

**Keywords:** Clostridium Perfringens, Type, Diagnosis, Molecular, systematic review

## P948 - 384: Identification of Salmonella isolated from dairy farms around Tehran and Alborz province using classical and molecular methods

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**Background and Aim:** In this study, PCR method was employed to identify Salmonella Enteritidis, Infantis and Dublin

**Methods:** 41 Salmonella were isolated from diarrhea ,aborted fetuses ,abomasum and lung samples of dairy calves in Tehran and Alborz province breeding centers and were confirmed by biochemical assays then the isolates were identified by serological methods using polyvalent and monovalent Salmonella antisera. DNA of samples was extracted using boiling method and was subjected to PCR.

**Results:** All samples were analyzed by PCR . Total of 41 samples identified as Salmonella. 32 samples were S.Enteritidis, 4 samples were S.Infantis and 4 samples were S.Dubblin

**Conclusion:** According to the results, it seems that PCR can be employed as a substitution method for expensive and time consuming biochemical and serological methods for identifying Salmonella serovars. PCR method was previously used to identify Salmonella Enteritidis but it is used to identify Salmonella Dublin for the first time in Iran. As Salmonella Enteritidis was previously isolated from poultry isolation from calves may be due to usage of chicken meat powder in calves' feedstuff.

**Keywords:** Salmonella, Enteritidis dubblin Infantis, PCR

# P949 - 388: TREND OF VACCINATED DOG NUMBERS FOR RABIES IN IRAN DURING 2005 TO 2015

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**Background and Aim:** Rabies is one of the most important zoonotic diseases. Taking into account that most of the human cases are transmitted from dogs, it is necessary to vaccinate owned dogs besides collecting the stray dogs. Therefore, the aim of this study is to investigate the trend of vaccinated dog numbers for rabies in Iran during 2005 to 2015.

**Methods:** Data regarding numbers of vaccinated dog for rabies in Iran were extracted from agriculture ministry. Afterward, trend of the vaccinated dog numbers during 2005 To 2015 was determined.

**Results:** Trend of vaccinated dog numbers for rabies has been increasing until 2007. After this year, the trend has been decreasing but in the recent years the trend again has been increasing. The highest numbers of vaccinated dog was 389508 in 2007 and the lowest numbers of vaccinated dog was 171008 in 2005. Likewise, on average 299751 dogs annually has been vaccinated for rabies during these years.

**Conclusion:** Considering that one of the most important programs to control rabies is to vaccinate owned dogs, the increasing trend in recent years is a good sign. Also improving other program to control rabies, such as collecting stray dogs, should be followed accordingly.

**Keywords:** Rabies, Vaccination, Dog, Iran

# P950 - 389: INCIDENCE AND MORTALITY RATE OF INFECTIOUS BURSAL DISEASE IN BROILER POULTRY FARMS OF IRAN DURING 2005 TO 2015

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**Background and Aim:** Infectious bursal disease is a viral infection of poultry that affecting the immune system of them. Disease occurrence can cause many economic losses to broiler poultry farms. Therefore, the aim of this study is to determine the trend of incidence and mortality rate of the disease in broiler poultry farms of Iran during 2005 to 2015.

**Methods:** Data were extracted from agriculture ministry of Iran. The data consist of numbers of diseased farm, capacity of diseases farm, numbers of mortality in diseases farm and mortality rate in diseased farms yearly. Finally, the trends for each variable were determined.

**Results:** Numbers of diseased farm has been decreasing from 2005 to 2015 i.e. numbers of the farm was 3730 in 2005 and 82 in 2015. Also, trend of capacity of diseased farms was decreasing. However, trend of mortality rate in diseased farms has seen many fluctuations during these years. Minimum mortality rate was 5.7% in 2008 and maximum mortality rate was 13.4% in 2012.

**Conclusion:** In general, this study indicated that in spite of the existence of fluctuating trend concerning mortality rate, numbers of diseased farm and capacity of diseases farms have been decreasing in Iran during period of study. Therefore, it seems that control program of the disease in Iran carried out well and it is needed to be continuing.

**Keywords:** IBD, Incidence, Mortality, iran

# P951 - 390: TRENDS OF TESTED EQUINE FOR GLANDERS INFECTION IN IRAN DURING 2005 TO 2015

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**Background and Aim:** Glanders is a bacterial zoonotic disease. The most sensitive host to agent of the disease is equine. Thus, the most important way to control and eradication of the disease is to identify asymptomatic diseased equine using Mallein test and then culling them. Therefore, this study carried out to determine the trend of tested equine for glanders infection during 2005 to 2015.

**Methods:** Data include numbers of tested equine and numbers of equine positive to test yearly were extracted from agriculture ministry. Then, percentage of positive equine to tested equine was calculated. Eventually, trend of tested equine number and percentage of positive equine for test were determined.

**Results:** Numbers of tested equine for glanders during the study years has been increasing and from 11758 equine in 2005 increased to 33051 equine in 2015. On average, 20620 equine were tested for glanders annually. On the other hand, trend of positive equine percent, were constant approximately during these years. On average, 0.001 percent of tested equine to glanders were positive.

**Conclusion:** In general the results showed that numbers of tested equine for glanders was increased during these years. Since tested equine and culled positive equine is the most important program to control of the disease, it is necessary to extend this trend for prevention of occurrence of the disease in animal and humans.

**Keywords:** Glanders, Equine, Mallein, Iran

# P952 - 425: DETERMINATION OF ANTIBIOTIC RESISTANCE PATTERN OF STAPHYLOCOCCUS AUREUS ISOLATED FROM BOVINE MASTITIS IN SANANDAJ AREA

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**Background and Aim:** Mastitis is the most common disease in dairy herds and is the main cause of antibiotic use in adult dairy cows. Staphylococcus aureus is a zoonotic pathogen causing subclinical and mild-to-moderate clinical mastitis in dairy cows, which causes significant economic losses to dairy farmers. The aim of this study was to determine the antibiotic resistance pattern of Staphylococcus aureus isolated from bovine mastitis in Sanandaj area.

**Methods:** In this cross-sectional study, a total of 203 milk samples were collected from subclinical and clinical mastitis cases of cattle during 2015–2016 in Sanandaj area. Fifty-two S. aureus isolated by standard bacteriological methods. The antibiotic susceptibility to ampicillin, penicillin G, amoxicillin, cephalexin, cephazolin, cefotaxime, ceftazidime, gentamycin, norfloxacin, ciprofloxacin, clindamycin and vancomycin was performed using disk agar diffusion method on Mueller-Hinton agar as described by the Clinical and Laboratory Standards Institute (CLSI). The inhibition zones diameter were recorded in millimeters using a sliding calliper and were interpreted according to the criteria of the CLSI.

**Results:** The highest antibiotic resistance was to penicillin G (86.53%) and ampicillin (67.30%) and the lowest resistance was to gentamycin (15.38%) and norfloxacin (19.23%) among S. aureus isolates. Also, resistance to vancomycin (61.54%), amoxicillin (53.85%), cephalexin (23.08%), cephazolin (51.92%), cefotaxime (26.92%), ceftazidime (44.23%), ciprofloxacin (21.15%) and clindamycin (55.76%) was observed.

**Conclusion:** In our research, resistance to common antibiotics like penicillins among S. aureus isolates from bovine mastitis is high in Sanandaj area. Further studies are needed in other areas to determine antibiotic resistance patterns.

**Keywords:** Staphylococcus aureus, Bovine mastitis, Drug resistance

# P953 - 429: IDENTIFICATION OF PATHOGENIC LEPTOSPIRES BASED ON LIPL32 GENE

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**Background and Aim:** Leptospirosis is a serious zoonotic infection and the most prevalence disease in tropical and subtropical region such as north of Iran. Lipl32 is an immunogenic outer membrane protein. The Leptospiral lipl32 gene expressed only in pathogenic Leptospira spp. The aim of this study was to apply a molecular method to identification pathogen Leptospires by PCR based on lipl32 gene.

**Methods:** Saprophytic and pathogenic Leptospira serovars were used in this study. The bacteria were inoculated into the selective culture medium and extraction of the genomic DNA was performed by standard Phenol-Chlorophorm method. The specific primers for proliferation of lipl32 gene were designed. The specificity and sensitivity of PCR method was evaluated

**Results:** PCR product was 272 bp which indicated proliferation of lipl32 gene which was supported using electrophoresis. The PCR based on lipl32 gene detected all pathogenic reference serovars of Leptospira spp. No PCR products were amplified from the non-pathogenic L. biflexa.

**Conclusion:** Considering the spread of Leptosperosis in moderate and hot areas which have high rate of fall, a proper molecular diagnostic test with high specificity and sensitivity such as PCR is essential. The PCR assay developed in this study can be used for the early detection of leptospirosis.The lipl32 gene is highly specific and is absent from nonpathogenic leptospira

**Keywords:** Leptospirosis, PCR, lipl32, Identification, Leptospira

# P954 - 431: 16S RRNA PCR FOR IDENTIFICATION OF NON-PATHOGENIC LEPTOSPIRA ISOLATES.

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**Background and Aim:** Leptospirosis, a worldwide zoonotic disease caused by pathogenic species of Leptospira , is considered as a re-emerging disease in humans and animals. PCR analysis is increasingly used for the diagnosis of infectious diseases caused by fastidious microorganisms. Initially several PCR techniques were developed to detect isolates belonging to the Leptospira genus.16S rRNA gene sequences are potentially useful for species identification of Leptospira ,but there are a large number of sequences of various lengths and quality in the public databases therefore the aim of this study is detection saprophytic leptospira by 16S rRNA gene.

**Methods:** Saprophytic Leptospira serovars were used in this study. Leptospira were grown in Ellinghausen, McCullough, Johnson, and Harris (EMJH) medium at 28 °C and extraction of the genomic DNA was performed by standard Phenol-Chlorophorm method. The specific primers for proliferation of 16S rRNA gene were used. The specificity and sensitivity of PCR method was evaluated.

**Results:** PCR product was 240 bp which indicated proliferation of 16S rRNA gene which was supported using electrophoresis. The PCR based on 16S rRNA gene detected saprophytic leptospira serovars. No PCR products were amplified from the pathogenic leptospires.

**Conclusion:** Recently, leptospirosis has been recognised as a re-emerging infectious disease among animals and humans.Therefore PCR assay with high specificity and sensitivity may prove to be a rapid method for identification non-pathogenic leptospira from pathogenic leptospira.

**Keywords:** Saprophytic Leptospire, 16S rRNA , Identification

# P955 - 468: THE EFFECT OF ANTIBIOTIC, PROBIOTIC AND PREBIOTIC (DIAMOND ORIGINAL XPC) IN BROILERS FEEDING FOR SAFE FOOD PRODUCTION

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**Background and Aim:** Recent outbreaks of food-borne diseases highlight the need for reducing bacterial pathogens in foods of animal origin. Animal enteric pathogens are a direct source for food contamination. Campylobacter is one of the leading causes of foodborne illness worldwide and is associated with consumption of poultry products. The ban of antibiotics as growth promoters (AGPs) has been a challenge for animal nutrition increasing the need to find alternative methods to control and prevent pathogenic bacterial colonization. An alternative and effective approach to antibiotic administration to livestock to reduce bacterial contamination is the use of probiotics and prebiotics, which can reduce pathogenic bacteria.

**Methods:** In this research, the preventive effects of antibiotic alternatives on the immune system were investigated. 336 one-day-old male and female (equal in number) broiler chicks (Ross 308) were divided into 6 treatments with 4 replication of 14 chicks per replication and were analyzed with a completely randomize design. Treatments were negative (NC) and positive control (PC) Treatments received following additives: antibiotic (A: 0.5g/kg), probiotic (P: 1g/kg till finisher after that 0.5 g/kg) and, prebiotics (H: 0.3, L: 0.15 g/kg). All treatments except NC challenged with 1 × 107 (CFU/ mL) of C.Jejuni in 21 days of age.

**Results:** Between treatments probiotic had the best function in reduction of colonization that had significantly difference with negative control ($P< 0.001$).

**Conclusion:** The result of this study indicated that pro and prebiotic could be effective in reduction of bacterium colonization.

**Keywords:** Campylobacter jejuni, antibiotic, probiotic, prebiotic, food-borne

# P956 - 490: SEROPREVALENCE OF COXIELLA BURNETII IN SHEEP USING ELISA IN KERMANSHAH CITY

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**Background and Aim:** Q fever is a zoonotic disease caused by Coxiella burnetii is. Acute and chronic diseases in humans as seen. coxiellosis in domestic animals is usually subclinical although abortion and stillbirths in sheep and goats is associated. Farm animals are the most important reservoir of Coxiella through milk, urine, feces and respiratory secretions and reproductive repel it. Inhalation of aerosols contaminated with human and animal infection is mainly transmitted. In this study, seroprevalence of Coxiella burnetii in sheep slaughtered in the city of Kermanshah was conducted using ELISA.

**Methods:** This study was conducted in spring 1396. A total of 92 serum samples of sheep for slaughter to abattoirs were brought Inscription were collected and the presence of antibodies to Coxiella burnetii indirect ELISA were tested.

**Results:** In this study, 3 of 92 serum samples (3/26 percent) were positive for Coxiella burnetii.

**Conclusion:** Given that no study about the presence of bacteria or antibodies to the bacterium Coxiella burnetii in the city of Kermanshah been the result of this study, the need for the presence of these bacteria in humans, goats, sheep and cattle in the age and sex in the city reveals different.

**Keywords:** Q fever, Coxiella burnetii, ELISA, sheep, Kermanshah, Iran

# P957 - 503: USING OZONE FOR BROILER BREEDING

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**Background and Aim:** The use of ozone as a disinfectant and therapeutic material is progressing.

**Methods:** A broiler farm with 40,000 broiler chickens chose (4 houses of 10000) and bred chicks for 45 days, it set in two unique groups of treatment and control , in the control groups conventional chemical disinfectant used for initial stages and during breeding disinfection. In the treatment group the Ozonated air (0.1 - 0.3 ppm) and Ozonated water (0.8-1 ppm) was used for initial and breeding period disinfection.

**Results:** Regarding to analysis of the day of 21, there was a significant difference ($P < 0.01$) in the ND headline and the PCV between the control and treatment ($P < 0.05$) but were not seen significant difference for other factors The ND titers and the PCV amount in the control were over than treatments , The analysis at 42 days of age showed similar results as like as 21th days so significant differences were shown in the ND titer and the PCV between the control and treatment ($p < 0.05$) but were not seen significant difference for other factors.

**Conclusion:** It is oriented that using ozone could be more effective than the conventional chemical disinfectant.

**Keywords:** Broiler, Ozone, Disinfection

# P958 - 513: SERO MONITORING OF NDV AND AIV (H5N1 AND H9N2) OF ISFAHAN OSTRICH CHICKS

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**Background and Aim:** Isfahan Ostrich breeding has the 1th score in Iran and at the moment a different types of ostrich farms included breeders, meat type and chickens under 3 months are active, An unfamiliar syndrome with recumbence , depression and leg problems.

**Methods:** So due to clinical sign a wide serological study for probable ND and AI were done and 10% of existed population were selected for blood sampling., The technical methods for NDV and AIV were the HI and for correspondence used ELISA for serology.

**Results:** The advantages for ND showed that there are not any protective titer in the population and no any regression intra and inter a field .In H5N1 titration , fortunately no any immunoglobins were active so they were free of H5N1(it was expected due to Iran is free of H5N1),but for H9N2 the titers were very various. More than 68 % have not any titer and in the next 32% the titer were variable from 2 to 5.

**Conclusion:** Based on this study all of the farms recommended for NDV vaccination and H9N2 vaccine injection.

**Keywords:** AI, ND, Ostrich chick, Isfahan

# P959 - 526: DETECTION AND PHYLOGENETIC STUDY ON ENTERIC ASTROVIRUSES IN DIARRHEIC CALVES IN IRAN

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**Background and Aim:** Diarrhea is one of the most important disease of neonatal calves leading to death and large economical lost in dairy herds. Astrovirus is one of enteropathogenic viruses of human and other mammalian neonates which its importance has not been well known to cause diarrhea in calves. In this study prevalence of presence of bovine astroviruses (BAV) in neonate calves and their phylogenetic relation were investigated.

**Methods:** 200 fecal samples were collected from diarrheic calves up to 1 month old. Samples were collected from industrial and rural farms located in 9 provinces of Iran namely; Tehran, Alborz, Qazvin, Mazandaran, Isfahan, Sistan and Baluchestan, Razavi and south Khorasan and Fars. Extracted viral RNAs were examined by RT-PCR and 3 positive PCR products were directly subjected to sequence determination. Phylogeny study were done using Mega 5 software.

**Results:** BAV was detected in 9% of samples (18/200). No astrovirus were detected in Razavi and South Khorasan and Sistan and Baluchestan provinces. BLAST and phylogenetic studies of samples from Mazandaran, Qazvin and Isfahan provinces showed high relationship with strains isolated from Japan.

**Conclusion:** Sampling of this study was covered a wide geographical areas of Iran and presence of BAV was demonstrated in high prevalence in Iran and they were showed in at least 6 provinces for the first time. Although number of samples collected from each provinces was not enough to determine the importance of BAV in calf diarrhea so, more investigation should be done to answer this question.

**Keywords:** Bovine Astroviruses, Calf Diarrhea, Molecular epidemiology, Phylogenetics, Iran

# P960 - 534: ANTIBIOTIC RESISTANCE AND CLONAL SIMILARITY OF ESCHERICHIA COLI ISOLATED FROM BROILER CHICKENS WITH COLIBACILLOSIS

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**Background and Aim:** The aim of this study was to evaluate antibiotic resistance in E. coli isolated from broilerchickens against some of human medicine important antibiotics and to investigate clonal similarity of these isolates among different farms.

**Methods:** Twenty four E. coli isolates from different broiler farms with colibacillosis in Shiraz County were investigated for resistance to cephalosporins and other antibiotics using disk diffusion method. Clonal relations of these E. coli isolates were evaluated with Pulse Field Gel Electrophoresis.

**Results:** Resistance to quinolones and fluoroquinolones were high in these isolates. So that, nalidixic resistance and ciprofloxacin resistance were 100 % and 95.5 %, respectively. On the other hand, low rates of resistance were detected against to cephalosporins and aminoglycosides. Results of PFGE, considering 80 percent similarity between isolates, showed that E. coli isolated from different broiler farms in this area located in 5 common pulsotypes and 6 single clones.

**Conclusion:** High fluoroquinolone resistance in these isolates could relate to common use of other members of this antibiotic family such as enrofloxacin and flumequine in poultry farms of this area. In contrast, cephalosporins and aminoglycosides resistance were too low due to barely use of these antibiotics in poultry farms. PFGE results showed high clonal similarity among pathogen E. coli isolated from different broiler chicken farms and this similarity could potentially represent same clonal origin of these isolates.

**Keywords:** Escherichia coli, broiler chickens, antibiotic resistance, PFGE

# P961 - 541: DETECTION OF CLASS 1 INTEGRONS IN ESCHERICHIA COLI ISOLATED FROM BROILER CHICKEN IN FARS PROVINCE OF IRAN

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**Background and Aim:** Integrons are bacterial genetic elements which able to promote acquisition and expression of genes embedded within gene cassettes. Integrons' gene cassettes that have been identified to date often encoding antibiotic resistance factors. Resistance genes linked together on the integrons encoding multiple drug resistance. The aim of this study was to identify class 1 integrons and investigate its prevalence in Escherichia coli isolates of broiler chicken.

**Methods:** Sampling was done at three stage (stage 1: one-day-old chicks, stage 2: 20-30 day and stage 3: before slaughtering) from 20 broiler farms in Fars Province. A total of 300 isolates from fecal samples (each stage 100 isolates) were identified as E. coli based on their phenotypic and biochemical characteristics. Antibiotic susceptibilities were investigated by disc diffusion method. Multidrug resistant E. coli isolates (139 selective samples) examined for the presence of class 1 integrons using PCR assay. The positive ones were examined for the characterization of different drug resistant genes using sequencing method.

**Results:** The results showed that class 1 integrons was present among isolates and its abundance was 67.7%. The frequency of Class 1 integrons during stage 1 to 3 of sampling was 68.4%, 72.7% and 60.9%, respectively. The results of sequencing gene cassettes also indicated the presence of orfF gene (unknown function) and other 3 types of resistant genes to trimethoprim (dfrA), streptomycin (aadA) and erythromycin (ereA).

**Conclusion:** High frequency of class 1 integrons contains different class of antibiotic genes could be straightforward effects of high quantities of antibiotic resistance in broiler farms.

**Keywords:** Class 1 integrons, Escherichia coli, Broiler chicken, Multidrug resistance

# P962 - 556: PCR-BASED DETECTION OF MYCOBACTERIUM AVIUM SUBSP. PARATUBERCULOSIS, A QUADRUPLE-MARKER APPROACH TARGETING IS900, ISMAV2, F57 AND LOCUS 255

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**Background and Aim:** Mycobacterium avium subsp. paratuberculosis (MAP) causes an incurable granulomatous enteritis (paratuberculosis), in ruminants with huge economical loss on animal husbandry at global scale. In the Iranian environment, paratuberculosis has been detected in cattle, sheep and goat herds.A number of PCR assays have been developed to enable laboratory diagnosis of paratuberculosis.This study was aimed to assess suitability of ISMav2, f57 and locus255 species-specific genetic markers along with IS900 in a quadruple-marker approach proposed for detection of MAP.

**Methods:** Eighteen MAP isolates collected from bovine, ovine and caprine hosts farmed in 6 provinces of Alborz, Zanjan, Fars, Tehran, Isfahan and Qazvin were sub-cultured on Herrold's egg-yolk slants. Bacterial genome was obtained through boiling. A single-PCR protocol was developed to enable simultaneous targeting and amplification of ISMav2, f57 and locus 255 loci, three recently found species-specific markers in MAP. This was paralleled with IS900-PCR as the universal MAP diagnostic assay.
**Results:** The expected PCR amplicon was produced by all the studied isolates and positive controls at the four selected loci. No non-sense band was observed in electrophoresis of PCR outcome from all the four PCR assays.
**Conclusion:** The ISMav2, f57 and locus 255 loci are present in the genome of Iranian MAP population. Application of these loci either individually or together with others in any PCR assay can extend accuracy of the established IS900-PCR in identification/detection of MAP.

**Keywords:** Paratuberculosis, IS900, ISMAP02, ISMAV2, HspX

# P963 - 569: ANTIBIOTIC RESISTANCE PROFILES OF STAPHYLOCOCCUS AUREUS ISOLATED FROM MILK SAMPLES OF CATTLE WITH CLINICAL MASTITIS IN INDUSTRIAL FARMS OF HAMEDAN

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**Background and Aim:** Bovine mastitis is an important disease which may lead to major economic losses in dairy herds. Mastitis is caused by a wide spectrum of pathogens and epidemiologically categorized into contagious and environmental mastitis. Staphylococcus aureus is one of the most common etiological agents of contagious bovine mastitis worldwide. The aim of this study was molecular detection of S. aureus isolates recovered from bovine milk samples from industrial farms in Hamedan province of Iran.

**Methods:** In the present study, a total of 120 milk samples were taken from June, 2016 to May, 2017. S. aureus isolation and conformation was done based on the conventional microbiological tests and presence of femA gene, respectively. Disc diffusion test was used to check the susceptibility of S. aureus isolates against 18 commonly used antibiotics according to the guidelines of Clinical Laboratory Standards Institute (CLSI).

**Results:** Totally, 42 S. aureus isolates were identified from milk samples and subsequently confirmed using a species-specific PCR. Our results revealed that penicillin was the less effective antibiotic. However, none of the isolates was resistant to vancomycin. The results of antibiotic sensitivity test showed that 2 (4.76%) isolates were phenotypically resistant to oxacillin and therefore, categorized in methicillin-resistant Staphylococcus aureus (MRSA) group.

**Conclusion:** Considering high contamination rate of this pathogen among milk samples, we suggest that approved hygiene programs must be established to control S. aureus contaminations and infections.

**Keywords:** Bovine mastitis, Staphylococcus aureus, Hamedan

# P964 - 575: ISOLATION AND IDENTIFICATION OF DERMATOPHYTE AND NON-DERMATOPHYTE SPECIES AND ISOLATES THE MOLECULAR ANALYSIS OF SWIMMING POOLS OF ESFAHAN.

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**Background and Aim:** Many studies show that swimming in swimming pools can cause infection and there is concern that exposure to water and the environment swimming in the pool to fungal diseases develop.

**Methods:** Randomly selected from the community swimming pool in Esfahan province was 10,sampling from the locker , shower,pashvyl,sauna and bath pools,on three different occasions during the spring and summer of 1394 was carried out.the fungal pollution of the area for swimming pools carpet sterile technique was used.a total of 100 samples from 6 pools ,for isolation of fungal contamination was tested.

**Results:** The results of this study need better sanitation and disinfection to reduse water pollution and surroundings pools attention and monitoring is essential.

**Conclusion:** All 100 samples collected,a fungal infection.non-dermatophyte fungi isolates included:Aspergillus fumigatus,Aspergillus flavus,aspergillus niger,fusarium, ,rhodotorula Alternaria,Rhizopus,Penicillium,Paecilomyces,Candidates,and was Kanyngamla Faytu mentagrophytes dermatophyte isolated was only Traykv.

**Keywords:** fungi,swimming pools,molecular analysis

# P965 - 578: EVALUATE THE POSSIBILITY OF CANDIDA ALBIKANS CLINICAL STRAINS IN LIQUID AND SOLID MEDIUM BY MEANS OF ZATARIA MULTIFLORA AND TO STUDY THE EFFECT OF ZATARIA MULTIFLORA ON CANDIDA MORPHOLOGY WITH TEM.

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**Background and Aim:** In recent years, Yeast, especially Candida species, are the most common fungal that are separated from human infections.

**Methods:** 50 strains of clinical Candida from clinical purified samples were taken from Esfahan medical university microbial research center infectious diseases.With the help of sensitivity with micro plate method, MIC was determined for all strains with ELISA- reader machine. to investigate the effect of Zataria multifloria on the Candida albicans yeast morphology, firstly yeast was cultured in Sabroudextrose agar for 24 hours and was exposed to each strains of MIC concentrations.

**Results:** As you see, the higher concentration of essence will lead to higher non-growth halo diameter. As you see zataria multiflora had the most effect on the studied strains. This essence was also influential on many strains even in a dilution of ./526 and made halo's diameter. totally halo's inhibition diameter zone in concentrated essence and the other dilutions in zataria multiflora were more than Mentha longifolia and Origanum vulgare.Micro plate dilution with the help of %10 concentration from 3 essence presented significant results. The lowest growth in 2.25 ,5 dilutions with the frequency 0 , and the highest growth in 0/16525 dilutions with the frequency 40 (%100),were observed. Upon the contact of essence with yeasts, the instant decrease of numbers will be observed in zero time. This decrease will be increased with time and after 24 hours , will reached to the minimum numbers.

**Conclusion:** Results showed that the antifungal activity of zataria multiflora is hig.

**Keywords:** Candida albicans, plant essence, zataria multiflora

# P966 - 594: THE COMPREHENSIVE MOLECULAR SURVEILLANCE OF TWO HONEY BEE VIRUSES IN IRAN; 2015-2016

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**Background and Aim:** At least 18 viruses have been reported in the honey bee (Apis mellifera L.). However, as severe diseases in honey bees are mainly caused by six viruses, they are the most important in beekeeping. These viruses include deformed wing virus (DWV), acute bee paralysis virus (ABPV), chronic bee paralysis virus (CBPV), sacbrood virus (SBV), kashmir bee virus (KBV), and black queen cell virus (BQCV).

**Methods:** In this study, we evaluated 89 Iranian honey bee apiaries (during the period 2015 2016) suffering from symptoms of depopulation, sudden collapse, paralysis, or dark coloring, by employing reverse transcription-PCR (RT-PCR). Samples were collected from four regions (Mazandaran, Hormozgan, Kurdistan, and Khorasan Razavi) of Iran.

**Results:** Of the 89 apiaries examined, 16 (17.97%), and 3 (3.37%) were infected by DWV, and CBPV, respectively.

**Conclusion:** The present study examined the detection of the two most important honey bee viruses in bee colonies suspected of infection and identified remarkable differences in the distribution patterns of the viruses in different geographic regions of Iran.

**Keywords:** Honey bee, Deformed Wing Virus, Chronic Bee Paralysis Virus, Iran, Molecular Detection

# P967 - 595: DEVELOPMENT AND VALIDATION OF TAQMAN REAL TIME RT-PCR TEST FOR DETECTION AND QUANTIFICATION OF INFECTIOUS BRONCHITIS VIRUS ON THE BASIS OF INFECTIOUS DOSE

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**Background and Aim:** AVIAN INFECTIOUS BRONCHITIS VIRUS (IBV) is the cause of an important serious infectious disease of upper respiratory organ of poultry which poses a large losses and economic damages in poultry industry .The aim of this study is setting up and validation of a real time RT-PCR test to measure the quality & quantity of poultry bronchitis virus.

**Methods:** We use Nucleoprotein gene to design probe and primers. Virus H120 of Razi Institute was used to run the teat. Validation was fulfilled to measure specificity (against other avian pathogenic agents), sensitivity test (via limit of detection approach based on infection dose) and determination of repeatability using Inter & Intra Assays.

**Results:** The test was able to diagnose an amount of $10^2$ of the infection dose (EID50) and results of Inter Assay & Intra Assay were reported very close to each other. Also, in specification test no other factors were detected (100%).sensitivity test was 100 times more than regular PCR.

**Conclusion:** RRT-PCR Taqman has benefit of more sensitivity than other methods and considering that infectious dose calculation in eggs is time – consuming, this method can be used to guess the infectious dose of virus in possible shortest time. As a result, it can be good method to check out the quality and quantity of vaccine .

**Keywords:** IBV, real time RT-PCR, Nucleoprotein gene

# P968 - 596: DEVELOPMENT OF RRT-PCR TAQMAN FOR DETECTION OF NEWCASTLE DISEASE VIRUS

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**Background and Aim:** Newcastle disease (ND) is one of the most disastrous diseases of domestic birds and it impose a considerable economic loses to the poultry industry worldwide. In order to provide a sensitive molecular approach for the detection of NDV, a real-time reverse transcriptase (RT)-PCR assay that uses a fluorogenic probe was developed.

**Methods:** Degenerate oligonucleotide primers and TaqMan probes were designed to a region in the fusion protein (F) gene Matreix(M). To evaluate the validity of the test specify , limit of detection and reproducibility were calculated following standared measures.

**Results:** The detection limit of test was 10 EID50 and with 100 times more sensitivity comparing to conventional PCR. The spacifity the current test was 100% as no other important avian infectious pathologic agents were detected during examining the test.

**Conclusion:** The results of this study suggest that the described real-time PCR assay can be be used for the rapid detection and qualitative/quantitative measurement of NDV isolates.

**Keywords:** RRT-PCR, NDV, M Gene

# P969 - 597: ISOLATION OF ESCHERICHIA COLI FROM MILK SAMPLES COLLECTED OF CASES WITH CLINICAL MASTITIS IN HAMEDAN PROVINCE

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**Background and Aim:** Mastitis is an inflammation of the mammary gland that usually caused by bacterial infection of udder tissues. Clinical mastitis still causes major losses in production and increases treatment costs and premature animal culling. E. coli is one of the most important environmental bacteria which plays an important role in the development of clinical mastitis. The purpose of this study was to evaluation the contamination of clinical mastitis due to E. coli to help treatment and prevention.

**Methods:** A total of 130 milk samples were collected from dairy farms in Hamedan province of Iran. The samples were transferred to the laboratory and were then cultured on MacConkey and blood agar media. In the following, the isolates were confirmed to be Escherichia coli using common biochemical tests.

**Results:** The results showed that 61 (79.3%) out of 130 randomly collected milk samples were contaminated with Escherichia coli.

**Conclusion:** Based on our results, a high prevalence of contamination with E. coli was observed in the examined milk samples. Hence, it is suggested to take appropriate measures to control this infection.

**Keywords:** Clinical mastitis, E. coli, Hamedan

# P970 - 603: A SEROLOGICAL SURVEY ON COXIELLA BURNETII IN PREGNANT WOMEN WITH HISTORICAL CONTACT WITH ANIMALS REFERRED TO CLINICAL AND CENTER HEALTH IN KHORRAMABAD CITY

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**Background and Aim:** Q fever is zoonotic disease caused by Coxiella burnetii . The aim of this study was to investigate the seroprevalence of C.burnetii infection among pregnant women with historical contact with animals in Khorramabad (western Iran).

**Methods:** A total of 184 samples were collected randomly from pregnant women who reffered to clinical laboratory and center health in Khorramabad in 2017. Were exmined using indirect ELISA assay kit for the detection of C.burnetii phase II human antibodies in their serum sample.

**Results:** The total 184 serum samples from pregnant women with a history of animal contact were 89 (48/4%) positive,76 (41/3%) negative cases and 19(10/3%) suspected caces was a siginificant relationship between age, pregnancy, abortion, the position of the village to the city and kind of livestock units research has found that exposure to (pv>0/05) but between the months of sampling and results were statistically significant relationships(pv=0/001).

**Conclusion:** According to result of this study, seroprevalence of C.burnetii infection among pregnant women with historical contact with animals is highly in Khorramabad. It is necessary to pay attention to this infection because one of the factor abortion in pregnant women.

**Keywords:** Coxiella burnetii, Prevalence, Pregnant women, Khorramabad

# P971 - 604: THE COMPARISON OF SEROLOGICAL ON COXIELLA BURNETII IN PREGNANT WOMEN IN IRAN

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**Background and Aim:** Q fever is a common, globally distributed, zoonotic infection caused by the obligate intracellular gammaproteobacterial organism,coxiella burnetii. This disease caused various clinical symptoms in pregnant woman.

**Methods:** A comparison the serological on coxiella burnetii was performed among pregnant women in Khorramabad, Ahwaz and Parsabad. In rural and urben pregnant women in Ahwaz and Parsabad and in Khorramabad only rural pregnant woman were tested.The women was admitted to the laboratories and health centers in the city.

**Results:** The total 200 serum samples from pregnant women in Ahwaz, 44(22%) positive samples,156(78%) negative samples and Parsabad of 148 samples,56(37/82%) positive, 92 (62/16%) negative samples,In Khrramabad, from 184 serum samples, 89(48/4%) postitive cases and 76(41/3%) negative samples and 19(10/3%)suspected cases were reported.

**Conclusion:** In this study, there was a high prevalence of Q fever in pregnant woman, due to the complication of this disease, especially in the chronic phase, it would be necessary to pay more attention to the disease for treatment that would prevent the unwanted side effects of the disease for the mother and the fetus.

**Keywords:** Comparison, Serological, Coxiella burnetii, Pragnant Women, Iran

# P972 - 705: DETECTION OF MYCOTIC ABORTION IN SHEEP AND GOAT FLOCKS IN IRAN

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**Background and Aim:** Different infectious agents such as viruses, bacteria, protozoa and fungi may induce abortion in small ruminants and result in huge economic losses. Several species of molds and yeasts have been implicated in sporadic abortion of sheep and goats which accrues in the late pregnancy. Most studies devoted to small ruminant's abortion, are limited to a few bacterial agents especially Brucella, whereas there are approximately 35 species of fungi identified as the cause of abortion. The purpose of the present study is to evaluate mycotic abortion in 200 small ruminant's flocks of Iran.

**Methods:** Abomasal contents of 506 aborted fetuses from 200 flocks were collected aseptically and cultured on the plates of sabouraud dextrose agar (SDA) containing 1000 Units/ml of penicillin G. The media were incubated at both 25°C and 37 °C.

**Results:** Colonies related to Aspergillus fumigatus and candida species were isolated from 29 fetuses (5.7%).

**Conclusion:** Aspergillus fumigatus and candida species are the most common mycotic causes of abortion. Poor ventilation and wet environment are predisposing factors for fungal diseases; hence suitable management and avoiding of feeding moldy feed to pregnant animals are necessary to prevent the opportunity for the growth of abortifacient fungi. According to our results, laboratories are seemed to have needed appropriate protocols for the detection of fungi in cases of analyzing abortion specimens.

**Keywords:** Abortion, Asperfillus, Candida, Fungi, Mold, Sheep and goat

# P973 - 707: CLONING AND EXPRESSION OF S1 GENE PROTEIN OF IBV (GENOTYPE VARIANT 2) IN PET28A

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**Background and Aim:** Avian infectious bronchitis (IB) is an economically important, highly contagious, acute, upper-respiratory tract disease of chickens and other fowl, caused by the avian coronavirus infectious bronchitis virus (IBV). The aim of this study is expression of S1 gene protein genotype variant 2 in pET28a. In vitro protein expression is an important method for obtaining large amount of viral proteins to investigate their biological properties. The S1 glycoprotein of infectious bronchitis virus, due to its effective neutralizing antibody role an appropriate candidate for production of recombinant vaccine against infectious bronchitis disease.

**Methods:** In this study, the S1 gene fragment of infectious bronchitis virus genotype IS/1494/06 was amplified using reverse transcriptase-polymerase chain reaction (RT_PCR) and insert into PTG19-T vector then transformed into E. coli strain TOP10 and purified. It was then cloned into pET28a an expression vector of BL21.

**Results:** The insertion was proved by PCR analysis and isolation of S1 gene from Construct by restriction enzymes and finally, it was sequenced. The SDS-PAGE assay showed that a protein about 60 kDa was expressed, but western blot assay not confirmed the expression of S1 protein.

**Conclusion:** We demonstrated S1 protein did not express well. We suggest for obtain optimum expression protein try different expression vector or use smaller important portions of the sequence of S1 gene.

**Keywords:** Infectious bronchitis virus, Cloning, Eshershia coli, Recombinant protein

# P974 - 733: DETECTION AND MOLECULAR IDENTIFICATION OF THE SALMONELLA FROM DOG FECAL SAMPLES

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**Background and Aim:** Salmonella infections is transmitted by the fecal-oral route mainly through ingestion of contaminated food or water. Infection rates are greatest in young animals and in groups of confinement situations with overcrowding and poor sanitation. Salmonellosis is a potential zoonotic pathogen, pets occasionally are reservoirs for human infections, the purpose of this study was to investigate the presence of salmonella infantis in dogs.

**Methods:** Fecal samples from a 3-year-old female dog with her 4-month old whelps who had been fed on chicken leftovers, were collected and cultured in peptone water. Selenite-F was used as a pre enrichment media. The samples were then inoculated on to salmonella shigella agar (ss agar) and MacConkey agar. In case of any suspected colonies. Additional biochemical test were performed for confirmation. All isolates belonging to group D were analyzed by multiplex PCR which identified as salmonella infantis. Molecular conformation of salmonella infantis was carried out by performing a PCR detection of the Salmonella invasion gene invA.

**Results:** PCR results showed that three isolates were determined as S. Infantis.

**Conclusion:** Salmonella could cause infection in human beings if the bacteria are contracted either from the animals directly or contaminated objects around them. Elimination of bacterial contamination from pet treats is required to reduce the risk of infection from these products. In this study, Salmonella were detected by detecting the invA gene by PCR.

**Keywords:** Salmonella Infantis, zoonotic, invA, multiplex PCR

# P975 - 763: SEROPREVELENCE STUDY OF Q FEVER IN COWS IN KHORRAMABAD BY ELISA TECHNIQUE

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**Background and Aim:** Q fever is a zoonotic disease caused by coxiella burnetii . In humans, the disease is seen as acute or chornic. In domestic animal, Q fever is usually subclinical although is along with aborotion and stillbirths in animal. Domestic animals are the reservoir of coxiella and shed it through milk, urine, feces and respiratory and reproductive secretions. Inhalation of contaminated aerosol is the main way to contaminate human and animals. The aim of this study is to determine the seroprevalence of Q fever in cows in khorramabad that also investigate the role of host factors.

**Methods:** In this study, blood samples were collected from 184 cows (female) at random in khorramabad. Prepared serum were tested for coxiella burnetti by comersial ELISA kit.

**Results:** Seroprevalence of Q fever in this study was 20.1%.

**Conclusion:** The results of this study showed that coxiella burnetii contamination is peresent in different sites khorramabad. Results indicated that contamination in cows is high that, according to zoonosis of his disease should be considered to health community.

**Keywords:** Q fever, seroprevelence, cow, khoramabad, ELISA.

# P976 - 819: THE SEROPREVALENCE SURVEY OF TOXOPLASMA GONDII INFECTION IN DOMESTIC CATS OF QAZVIN CITY

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**Background and Aim:** Toxoplasma gondii is an obligate intracellular protozoan organism that can cause toxoplasmosis. T. gondii is an important cause of miscarriage or adverse fetal effects, including neurological and ocular diseases, and may also have sequelae later in the life of an infected neonate. The feline species are the definitive host for this parasite, which shed oocysts in their feces. The purpose of this study was to evaluate the seroprevalence of Toxoplasma gondii infection in domestic cats of Qazvin city.

**Methods:** Between April and November 2016, a total of 63 blood samples (25 males and 38 females) were obtained from domestic cats in Qazvin city. These clinically healthy cats were admitted into pet clinics located in four districts of Qazvin city, for the serological detection of T. gondii infection. Blood samples were centrifuged at 5000g for 20 minutes at room temperature, and the separated serum samples were stored at -20°C until further analysis. Antibodies to T. gondii were determined in cat sera by the modified agglutination test (MAT). Sera with MAT titers of 1:25 or higher were considered positive.

**Results:** Seropositive results were found in 7 of 63 (11.11%) examined cats for T. gondii infection by MAT at the cut-off of 1:25. The seroprevalence in male cats was 14.28%, and in females it was 7.94%.

**Conclusion:** The results of the present survey indicate that T. gondii infection is relatively prevalent in domestic cats of Qazvin city. Integrated measures are needed to prevent and control T. gondii infection.

**Keywords:** Toxoplasma gondii, Cats, Agglutination tests, Prevalence

# P977 - 820: ISOLATION OF CHRYSEOBACTERIUM JOOSTEI FROM UNHEALTHY STELLATE STURGEON (A CASE STUDY: ESTAHBAN STURGEON FARM, FARS PROVINCE, IRAN)

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**Background and Aim:** The aim of this study is an isolation and identification of pathogenic agent from unhealthy stellate sturgeon (Acipenser stellatus, Pallas, 1771) with some infectious signs such as severe visceral hemorrhage, renal tissue destruction, bleeding on the spleen, heart ascites, expanded wounds on body surfaces, and fins rot that reared on the south of Fars province (Iran), Estahban sturgeon farm.

**Methods:** For this purpose, cultivating on brain heart agar (BHA) growth media, staining and the necessary biochemical tests on purified bacteria have been done in order. To increase the accuracy of the diagnosis, 16S rDNA region had been proliferated and the amplified gene fragment has been sequenced. In addition, evolutionary history was inferred by phylogenetic tree construction using Neighbor-Joining (NJ) method.

**Results:** Results of biochemical and molecular tests showed that Chryseobacterium joostei has been recognized. According to phylogenetic trees, Fars Isolate has the most similarity (99%) with Ch. joostei isolated from France, in return the least similarity has been seen with Indian isolated.

**Conclusion:** Regarding the growing number of infectious outbreaks in sturgeons, especially in intensive condition, isolation of new bacterial agents would not be unexpected. Therefore, the economic value of sturgeon causes needs to more research on infectious pathogens and their impacts on the health.

**Keywords:** Acipenser stellatus, Chryseobacterium joostei, Estahban sturgeon farm, Neighbor-Joining, Visceral hemorrhage

# P978 - 834: A SEROEPIDEMIOLOGICAL SURVEY OF Q FEVER AMONG SHEEP AND GOAT BY ELISA IN CITY ALSHTAR, IRAN PROVINCE

Samaneh Heydari[1]

1. -

**Background and Aim:** Q fever is a worldwide disease that is common between human and livestock. This disease is created by an obligate interacellular rickettsia called Coxiella burnetii. Cattle, sheep and goats are the main carriers of the disease. This study was conducted to identify the amount of Coxiella burnetii prevalence in the sheep and goat's blood in Alashtar, Iran.

**Methods:** In this cross-sectional study (from January 2016 to June 2016),162 sheep and goat blood samples were collected at random from the villages around the city of Alashtar. These samples were tested for the presence of Coxiella burnetii by the ELISA method.

**Results:** In this study, 162 samples were tested, that from total 42 samples of goat blood, 15 samples (9.3%) and a total of 120 sheep blood samples, 45 samples (27.8%) were positive for the presence of Coxiella burnetii.

**Conclusion:** The analysis of the collected data in different seasons and areas revealed that, more than 59.3 percent of the samples were negative and about 37 percent were positive, as well as the remaining 3.7 percent were suspicious in terms of Coxiella burnetii presence. The results of this study showed pollution in the upper area is the sheep and goat populations with regard to zoonotic disease that results of this study should be of interest to health policy.

**Keywords:** Q fever, Coxiella burnetii, ELISA, sheep, goat, Alashtar

# P979 - 835: SEROLOGIC STUDY OF Q FEVER IN SHEEP AND GOAT POPULATION OF LORESTAN PROVINCE BY ELIZA METHOD

Samaneh Heydari[1]

1. -

**Background and Aim:** Q fever, as a new zoonotic agent, is a Coxiella burnetii causative agent in many countries, including Iran. Tobacco is the most important Coxiella reservoir. In humans, the disease is seen as acute or chronic. In domestic animals, it is usually subclinical, albeit with abortion and stillbirth. The aim of this study was to determine the prevalence of serum Coxiella burnetii in sheep and goats in Lorestan province.

**Methods:** In this cross-sectional studys (from January 2013 to June 2016),266 sheep and goat blood samples were collected at random from the villages around the city of Lorestan. These samples were tested for the presence of Coxiella burnetii by the ELISA method.

**Results:** In this studys, 266 samples were tested, that from total 90 samples of goat blood, 33 samples (12.30%) and a total of 176 sheep blood samples, 62 samples (23.30%) were positive for the presence of Coxiella burnetii.

**Conclusion:** The analysis of the collected data in different seasons and areas revealed that, more than 58.27 percent of the samples were negative and about 35.7 percent were positive, as well as the remaining 6 percent were suspicious in terms of Coxiella burnetii presence. The results of this study showed pollution in the upper area is the sheep and goat populations with regard to zoonotic disease that results of this studys should be of interest to health policy.

**Keywords:** Q fever, Coxiella burnetii, ELISA, sheep, goat, Lorestan

# P980 - 837: COMPARISON OF IFA AND ELISA TECHNIQUES FOR DIAGNOSIS OF COXIELLA BURNETII

Saba Baharvand[1]

1. -

**Background and Aim:** Q fever is a zoonotic disease caused by an obligatorily intracellular bacterium, Coxiella burnetii. This disease, described for the first time among abattoir workers in Australia seems now recognised as being endemic worldwide. Both public health and animal health issues are closely related to Q fever.; The aim of this study was to investigate the comparison of IFA and ELISA methods in order to detect the presence of Coxiella burnetii in febrile patients in Khorramabad city.

**Methods:** In this study sampling started in october 2015 and has been continued until may 2016. Totally 100 blood samples were collected from febrile patients in privet and public hospitals for comparing ELISA and IFA methods.

**Results:** In this study, phase II IgG antibodies was 28.41% in ELISA method and 38% in IFA method.

**Conclusion:** The study demonstrated that the IFA is suitable for diagnosing Q fever and its therapeutic follow-up and is a good candidate for screening sera in large numbers.

**Keywords:** Coxiella burnetii, Q fever, IFA, ELISA, Febrile patients, Khorramabad

# P981 - 840: SURVEY ON CONTAMINATION OF PUBLIC PARKS OF DIVANDARREH CITY BY TOXOCARA PARASITE EGGS IN 2016

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**Background and Aim:** Toxocaridae is an intestinal nematodes and soil-borne parasites that cuase acute visceral toxoplasmosis and ocular. Public parks are vital places that may be contaminated by toxocara parasite. The aim of this study was survey on contamination of Public Parks of Divandarreh city by toxocara parasite in 2016.

**Methods:** In the experimental study, 65 samples (The approximate weight of 30 grams) were gathered from the grass lawns of Divandarreh Public Park. Sedimentation – flotation was used to examine. Samples were taken every 10 to 15 Smear. The specimens were observed with a microscope. Analysis of data were analyzed by statistical software SPSS 22.

**Results:** The number of 13 toxocara eggs were diagnosed. In the two samples there was only a lack of a fetal egg. Strongyloides larva was discovered in 100% of samples. It was observed in 55% of cases of parasitic mites, larvae and other eggs.

**Conclusion:** High efficient in Public park lawn Divandarreh by Toxoplasma parasite eggs may be due to some parameters such as: the available dogs and cats infected with the parasite toxoplasma efficient in these areas, the lack of sufficient care of lawns in the park in terms of traffic control and ownership of stray dogs and cats. topography of the parks.

**Keywords:** Toxocara parasite eggs, Contamination of lawn, Public Park

# P982 - 846: EXPERIMENTAL EVALUATION OF PATHOGENICITY OF AEROMONAS VERONII IN THE BELUGA (HUSO HUSO, LINNAEUS, 1758)

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**Background and Aim:** The purpose of the present study is evaluating of pathogenesis features of Aeromonas veronii in the Beluga (Huso huso, Linnaeus, 1758) experimentally.

**Methods:** So, a challenge experiment was designed based on Cai et al. (2012) with some modifications, to assess the pathogenicity of the bacterial agent that was formerly isolated from reared beluga on the south of Fars province (Iran), Estahban sturgeon farm. Thus, four groups of beluga (average weight = 1.5±0.5 kg) were intraperitoneally injected with bacterial cells of the pathogen with lethal dilutions (24 h bacterial culture, 102 -107 CFU per fish), except parallel control that was injected with sterile PBS. In the following, pathogenic signs were observed and mortalities were recorded daily for 15 days post injection with bacterial suspension (0.1 ml).

**Results:** Results showed that the LD50 of Aeromonas veronii live cells for Beluga was about 6.92×104 CFU per fish in i.p. injection. The dead sturgeon demonstrated the common infectious symptoms such as decreasing of appetite, unbalancing swimming, visceral hemorrhage, and heart ascites.

**Conclusion:** Forasmuch as these signs had observed in naturally diseased beluga that previously causative bacteria were isolated from them, the pathogenesis of Aeromonas veronii was confirmed.

**Keywords:** Huso huso, Aeromonas veronii, Pathogenecity, LD50, Intraperitoneal injection

# P983 - 914: DETECTION OF PATHOGENIC LEPTOSPIRAE IN PERSIAN SQUIRRLS (SCIURUS ANOMALUS) URINE SAMPLES BY PCR ASSAY

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**Background and Aim:** Leptospirosis is a world wide zoonotic disease caused by pathogenic species of leptospira interogans, that effects most of domestic and wild mammals. Serovars are maintained in nature by numerous sub-clinically infected wild and domestic animal reservoir hosts that serve as a potential source of infection and illness for humans and other incidental animal hosts. Leptospires are transmitted between animals by direct or indirect contact. Direct transmission occurs through contact with infected urine, venereal and placental secretions, bite wounds or ingestion of infected tissues . Direct spread of the infection is enhanced by crowding of animals.among reservoir hosts rodents are the most important host.

**Methods:** In this study 23 urine samples were collected from squirrels that reffered to veterinary hospital of university of Tehran and suirrels from Eram zoo, all urine samples were tested by Poly merase Chain Reaction (PCR) after DNA extraction with primers Lep1 and Lep 2 to amplify a 330 base pare fragment of rrs(16S) in DNA termal cycler. the amplification products were analyzed by electrophoresis in 1.5% agarose gel.

**Results:** The result of the study showed that 1 out of 23 samples was positive but in further PCR tests it became negative and there ofter all of the samples were negative for detection of leptospiral antigens.

**Conclusion:** In the same studies of rodents for leptospirae infection in rodents by PCR or other methods like MAT(microscopic ogglutination test) there were some possitive samples,we recomended that in other experiments its better to analyse more samples of rodents.

**Keywords:** Lepospirae, squirrel, urine, PCR

# P984 - 948: CRIMEAN CONGO HEMORRHAGIC FEVER

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1. -
2. -

**Background and Aim:** Although common human and animal diseases have existed since the beginning of human life on the planet, they have become more and more important in recent years, and today they have a special status not only in terms of health, but also economic and political. One of the most important ones is the Crimean Congo bleeding fever.

**Methods:** This article is a review article that has been updated up to date by searching for ISI, Scopus, Medline, and Pubmed and Google search engines. The use of SID and MAGIRAN information has also been used extensively.

**Results:** The Crimean Congo hemorrhagic fever (CCHF) is a viral zoonotic disease and is transmitted by arthropod-Born-Virus arthropods. Although it is a disease that is specific to animals, it also occurs in humans. The human infection begins with a non-specific infection, but with progression, the disease will lead to severe hemorrhagic syndrome with a high rate of fecundity. Therefore, as soon as the CCHF is suspected, the diagnosis is done by molecular methods, serology and anticipation of the virus.

**Conclusion:** Considering the importance of the rapid spread of viral hemorrhagic fever and their high mortality and economic losses, it is very important to increase awareness of the ways of transmission, prevention and control, timely diagnosis of the disease, and appropriate treatment. The purpose of the program is to combat the disease.

**Keywords:** Crimean Congo hemorrhagic fever, CCHF, zoonotic disease, common human and animal diseases

# P985 - 1003: THE FIRST REPORT OF NOSOPSYLLUS FASCIATUS FLEA INFECTION IN HEMIECHINUS AURITUS OF NORTH OF IRAN

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**Background and Aim:** Fleas are probably the most common external parasites seen on pets, which can cause skin irritation and itching by their numerous bites. Some of their salivary compounds can lead to access a kind of allergic dermatitis. In addition, fleas are potential vectors of infectious agents and serve as intermediate hosts for various tapeworm species.

**Methods:** Following the examination of a Hemiechinus auritus that was found on the campus of the Islamic Azad University of Babol, some fleas were isolated from the animal's body. To determine the genus and species, collected samples placed into labeled eppendrof containing 10% alcohol and transferred to the Laboratories of Veterinary Diagnostic Medicine at the Islamic Azad University-Babol branch. After clarification by lactophenol solution the parasites were identified as Nosopsyllus fasciatus, using valid systematic keys.

**Results:** Nosopsyllus fasciatus is determined by lacking a genal comb. They feed primarily on mammals, particularly rodents and play an important role in the transmission of pathogens to humans such as Trypanosomiasis, Bubonic plague, Salmonellosis and Tularemia.

**Conclusion:** Since today hedgehogs are kept as pets, determine their parasite infections fauna and prevalence can play a prominent role in preventing the spread of zoonotic diseases in human societies. It is important to mention that this is the first report of the existence of this genus and species of flea in hemiechinus auritus in Iran.

**Keywords:** Flea, Nosopsyllus, hedgehog, zoonosis, dermatitis

# P986 - 1004: SEROPREVALENCE OF OVINE TOXOPLASMOSIS FROM SHEEP IN GOLESTAN PROVINCE NORTHERN IRAN

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**Background and Aim:** Toxoplasma gondii is cosmopolitan protozoa infecting many warm-blooded animals including sheep. The aim of this study was to determine the prevalence of antibodies to T. gondii from sheep using Indirect Fluorescent Antibody method (IFA) in Golestan Province, north-east of Iran.

**Methods:** Sera from 382 sheep (325 female and 57 male) were obtained from Golestan Province, north-east of Iran in 2013. The sera were examined for T. gondii antibody (IgG) by IFA using either an antibody titer of 1:100 or higher considered as positive. The statistical analysis was performed by chi-square test and logistic regressions to analyze the influence of all examined factor (age and sex) on seroprevalence of toxoplasmosis.

**Results:** The overall seroprevalence of T. gondii antibodies in examined sera of sheep was 28.2%. The antibody titers in positive animals ranged from 1:100-1:1600. The prevalence of T. gondii antibodies in female sheep (29.5%) was higher than male (21%) sheep. With increase of age, prevalence of toxoplasmosis raised. No statistically significant difference was observed between male & female sheep and there was relationship between seropositivity and age.

**Conclusion:** High level of Toxoplasma infection in examined sheep shows a widespread exposure to T. gondii in Golestan Province and there is risk of acquiring infection of human by consumption of raw and undercooked meat of sheep.

**Keywords:** Prevalence, Disease, Toxoplasma, Animal, Sheep, Iran

# P987 - 1006: HUMAN DERMATITIS CAUSED BY OPHIONYSSUS NATRICIS, A SNAKE MITE

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**Background and Aim:** Ophionyssus natricis is a purely blood sucking parasite of snakes and is of worldwide distribution. Infected snakes often exhibit lethargy, pruritus, crusting dermatitis, and behavioral changes. Ophionyssus natricis can also attack humans, causing popular vesiculo-bullous eruption of the skin.

**Methods:** A 29 years old man working in a Zoo, Sari, Mazandaran, Iran, presented itchy papullar eruption of the skin. He had noticed small insects fixed on his skin and also large numbers of these same insects on a python and its cage in the zoo.

**Results:** Regarding to their morphological characteristics they were diagnosed as Ophionyssus natricis (Geravis, 1844), a snake mite.

**Conclusion:** It is the first report of Ophionyssus natricis from Iran.

**Keywords:** Ophionyssus natricis, Python snake, Dermatitis, Iran

# P988 - 1008: PREVALENCE OF Q FEVER AMONG SLOUGHTERHOUSE WORKERS IN KHORRAMABAD

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**Background and Aim:** Q fever is caused by a pleomorphic gram- negative coccobacillus called coxiella burnetii. Major reservoirs of this infection for humans are infected cattle, sheep, and goat. A sensitive host will catch the infection following inhalation of C. burnetii via aerosols that Infected by childbirth, feces, and urine of infected animals and to a lesser extent, via dermal scratches, mucous membranes, and consumption of raw milk. Q fever is prevalent among people who are in direct contact with animals, such as farmers Having livestock, veterinarians, and workers in slaughterhouses. Q fever is a systemic desease That can produce fever, atypical pneumonia, hepatitis or endocarditis.

**Methods:** In this study we use indirect ELISA for detect antibody phase II of Q fever.. First, we got 55 blood sampel slaughterhouse workers of KhorramAbad center of Lorestan province that Being in contact with animals and their secretions.

**Results:** Among the 55 subjects in this study, 31(56/36%) positive and 24(43/63%) negative samples were detected.

**Conclusion:** In this study, there was a high prevalence of chronic Q fever in slaughterhouse workers and shold take actions to preveint the transmission of infection to those who are in contact with animals and their products and immediate tereatment for positive ones.

**Keywords:** Q fever, slaughterhous worker, serological, Coxiela burnetii

# P989 - 1009: A SURVEY OF LISTERIA MONOCYTOGENES INFECTION IN ABORTED FETUSES OF SHEEP AND GOATS

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**Background and Aim:** Listeria monocytogenes may cause abortion, septicemia and encephalitis in small ruminants. Abortion form of listeriosis occurs generally during late pregnancy, without premonitory signs. The presence of L. monocytogenes which can be found in any plant, soil and environment, is reported in sheep and goat fetal materials worldwide. This study evaluates listerial infection of aborted fetuses of small ruminants.

**Methods:** Abomasal contents were collected from 408 aborted fetuses. 10 ml of each sample were inoculated into the Listeria enrichment broth and then incubated at 30°C for 48 hours. 0.1 ml of the broth was cultured on the Oxford agar and incubated at 37°C for 48 hours. Typical listeral colonies were confirmed using microbiological tests including CAMP, motility, hydrolysis on blood agar, catalase production, glucose and rhamnose fermentation and esculine hydrolysis.

**Results:**Using the microbiological tests, Listeria monocytogenes isolated from 16 fetuses.

**Conclusion:** Regarding to our results, isolation of the bacterium from 16 examined samples, highlights the necessity of Listeric abortion among ewes and does which lost their fetuses. In addition, what should be included in national programs related to small ruminant's abortion is to consider probability of intervention of several abortifacient agents such as Listeria in this circumstance.

**Keywords:** Abortion, Infectious agents, Listerai monocytogenes, Sheep and goat

# P990 - 1039: CORRELATION BETWEEN HUMAN DEVELOPMENT INDEX AND LISTRIOSIS IN THE SIX AREAS COVERED BY WORLD HEALTH ORGANIZATION

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**Background and Aim:** Listeria monocytogenes causes human listeriosis, which is associated with the highest hospitalization and mortality rates of all foodborne illnesses. Hence, listeriosis is increasingly recognized as a cause of life-threatening disease, therefore, this study was intended to investigate the relationship between Human Development Index (HDI) and the incident/death cases of listeriosis in the six areas covered by WHO.

**Methods:** In this ecologic study the row information was obtained by global burden of listeriosis from last systematic review and meta-analysis in 2010. The data on HDI was extracted from the global bank site. The data was analyzed using Spearman correlation test with SPSS software (version 23).

**Results:** In 2010, listeriosis resulted in 23150 illnesses, and 5463 deaths. Among the six regions of WHO, the highest listeriosis incidence rate (0.46) was observed in the AMRO, and the lowest incidence rate was 0.042 for EURO. Pearson correlation test showed that there was a significant inverse correlation between the incident cases of listeriosis and HDI ($r=-0.81$, $p\leq0.05$). As well significant inverse correlation was seen between deaths cases and HDI ($r=-0.80$, $p\leq0.05$).

**Conclusion:** This study was found significant inversely association between incident/death cases of listeriosis and HDI. Further epidemiological and comparative study is required to better understand the impact of HDI on listeriosis in regions of the world.

**Keywords:** Human Development Index, Listeriosis, Listeria monocytogenes

# P991 - 1049: INVESTIGATES THE EPIDEMIOLOGIC SITUATION OF PATIENTS WITH CRIMEAN_CONGO HEMORRHAGIC FEVER MAZANDARAN PROVINCE IN THE YEAR 2015

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**Background and Aim:** The Crimean-Congo hemorrhagic fever (CCHF) is a hemorrhagic fever in humans and animals.The disease is transmitted to humans through contact with human or animal blood.Is transmitted Also through bite tick hyalomma.

**Methods:** In this descriptive study, all cases of suspected and confirmed CCHF patients were examined by serologic and / or PCR tests and using epidemiological data including age, sex, occupation, nationality, history of contact with the livestock and the method of infection Clinical signs of patients were recorded. After collecting information, data were analyzed using subsidy software SPSS version 21.

**Results:** In this study, 20 patients were treated after diagnosis in the suspected CCHF group. Of these, 4 cases (20%) were definite, 12 cases (60%) were probable, and 4 cases (20%) were suspected (only some of the symptoms). Most of the patients were male (90.76%) with a range of 15-35 years old (35.83%) and living in urban areas (75%). 62.34% of all patients were ranchers, students and butchers. 80.34% of the patients mentioned the date of contact with the animals and the mortality rate from the specified cases was 20%.

**Conclusion:** According to the results of this study, early diagnosis of the disease and the training of risk groups such as butchers and ruminants are recommended to prevent and prevent the onset of the epidemic.

**Keywords:** Crimean-congo hemorrhagic fever, Epidemiology, Mazandaran, Iran

# P992 - 1131: USING MIXTURE OF GARLIC AND MELISSA ESSENTIAL OILS FOR PARROTS SCALY LEG TREATMENT

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**Background and Aim:** Allium sativum and Melissa officinalis grow in some climate of Iran,. In laboratory tests Allium sativum and Melissa officinalis show antiparasitic, antiviral and antibacterial properties which are rich source of polyphenols, chemicals in plants that provide their flavor and color. Polyphenols are also antioxidants, meaning they help protect cells from damage and may lower inflammation in the body.

**Methods:** Parrot scaly leg is caused by a knemdicoptes mutans,. This mite causes a chronic hyper kerattotic inflammation in the feather less organs specially in the toes and around the beak, .. The most common method of transmission of the disease is direct transmission or by indirect transmission by the infected cages or vehicles. The lesions start as small papules and gradually progress to a sever hyperkeratosis and mucosal scaly scab.

**Results:** In current study a mixture of Allium sativum and Melissa officinalis E.Os were used for treatment scaly leg mite disease in the parrot, The mixture included the glycerin as basement and 15% of each oils were longed for about 10 days as 4 times rubbed a day and more than 85% of infected birds were treated.

**Conclusion:** It was concluded that an oily mixture of garlic and melissa officinalis control and treat the mucosal mites infections.

**Keywords:** Allium, Melissa, Parrot, treatment, scaly leg

# P993 - 1157: DETERMINATION OF HELMINTHES PARASITES IN ABDOMINAL CAVITY OF ALOSA CASPIA FROM THE SOUTHEAST PART OF THE CASPIAN SEA

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**Background and Aim:** The aim of the present study was to evaluate the helminthic parasite infections in abdominal cavity of Caspian Zaloon shad (Alosa caspia) from Southeastern part of the Caspian Sea.

**Methods:** In this regard, 30 fish were caught from the the Caspian Sea and transferred to the lab, All isolated parasites were transferred to fixative solution and sent to the Iranian National Parasitology Museum, Faculty of Veterinary Medicine of the Tehran University, for total identification.

**Results:** In the present study 100 % of studied fish were infected at least with one kind of helminthic parasite; totally two parasite species including Anisakis simplex and Pronoprymna ventricosa were isolated from the abdominal cavity of studied fish. According to the results Pronoprymna ventricosa has the highest infection prevalence and was isolated from pyloric caeca, intestine and stomach in 93.33% of specimens. Anisakis simplex was isolated from abdominal cavity in 33.33 % of studied fish. Intensity of infection to Anisakis simplex and Pronoprymna ventricosa calculated as 8.4 ± 5.31 and 91.4 ± 21.46 respectively. Based on data analysis, there was no significant differences in total parasites load, parasite prevalence and parasite intensity between male and female of studied fish.

**Conclusion:** Zaloon shad in southeast part of the Caspian Sea are infected with Anisakis simplex and Pronoprymna ventricosa parasites.

**Keywords:** Helminthes parasites, Alosa caspia, Sotheastern part of Caspian Sea

# P994 - 1158: SURVEY ON HELMINTHIC INFECTIONS IN ABDOMINAL CAVITY OF CASPIAN SEA BREAM (ABRAMIS BRAMA ORIENTALIS) IN ALAGOL DAM – GOLESTAN- IRAN

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**Background and Aim:** Caspian sea bream (Abramis brama orientalis) is one of the valuable bony fish of Caspian sea and Aras lake. In the present study parasite infections of Caspian sea bream in Alagol lake have been studied.

**Methods:** In this regard, 31 fish specimens were considered for abdominal cavity parasite study. After biometry and parasite isolation, final detection of parasites species were done in Iranian National Parasitology Museum, faculty of veterinary medicine of the Tehran University.

**Results:** According to the result 2 nematodes parasite including Eustrongylides excisus and Anisakis simplex and 2 trematode parasites including Asymphyllodora tinca and Pronoprymna ventricosa were isolated from abdominal cavity of specimens. Result showed 58% of specimens were infected with parasite that Asymphyllodora tinca has highest prevalence and intensity of parasites and Eustrongylides excisus has lowest prevalence and intensity of parasites in this study.

**Conclusion:** In this study Anisakis and Eustrogylides because of their zoonotic properties are most important in human health so in this regard, Health hazards should be considered by consumers.

**Keywords:** Caspian Sea beam, parasite infections, trematode, nematode