DAY 1

Scientific Tracks & Abstracts



EuroSciCon Conference on

Microbiology & Virology

June 21-22, 2018 Paris, France

DAY 1

June 21, 2018

Sessions

Applied Microbiology | HIV and other Emerging Viruses | Infectious Diseases | Medical Microbiology | Animal Viruses | Clinical and Diagnostic Virology | HIV and other Emerging Viruses | Bacterial Viral Interactions | Viruses and Diseases

Session Chair
Barry T. Rouse
University Of Tennessee, USA

Session Co-Chair
Marcel E. Curlin
Oregon Health and Sciences University, USA

Session Introduction

Title: **Wild bird exposure to flaviviruses in southern Tunisian Oases**
Tasnim Ayadi, University of Gabes, Tunisia

Title: **Isolation and characterization of rhizobacteria from banana plant as growth promoting and biocontrol agent against soil borne pathogen**
Ibrar Khan, Abbottabad University of Science & Technology, Pakistan

Title: **Anti-cancer Drug Design**
M.Sissaoui, University of Biskra, Algeria

Title: **How metabolic events may influence the pathogenesis of a virus infection**
Barry T Rouse, University Of Tennessee, USA

Title: **Ignorance, Poverty, Poor Sanitation and Malaria in Ghana**
Vivian Nyarko, Ternopil State Medical University, Ukraine

Title: **Detection of diverse virulence factors in phages methicillin resistance *Staphylococcus aureus* (MRSA) isolated from mastitic cows**
Atheer Abdulrazzaq Abdulazeez, University of Baghdad, Iraq

Title: **Isolation, phenotypic and genotypic characterization of metallotolerant fungal isolates from industrial soil**
Ibrar Khan, Abbottabad University of Science & Technology, Pakistan

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Tasnim Ayadi et al., Arch Clin Microbiol 2018 Voulume: 9
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WILD BIRD EXPOSURE TO FLAVIVIRUSES IN SOUTHERN TUNISIAN OASES

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[2]Laboratoire de Sante Animale de Maisons-Alfort, France
[3]CEFE-CNRS, France

It has previously been suggested that southern Tunisian oases may be suitable areas for the circulation of flaviviruses. In order to anticipate and prevent possible epidemiological spread of flaviviruses in humans and domestic animals, the ecology of their transmission in these areas needs to be better understood. In this study, we investigated the exposure of the laughing dove (*Spilopelia senegalensis) to West Nile virus* (WNV) and *Usutu virus* (USUV) in four southern Tunisian oases that differ regarding vegetation structure and distance to the coast. Anti-flavivirus antibodies were detected in 17% of sampled doves. Ten per cent of the total tested doves were West Nile virus (WNV) seropositive and 4% were Usutu virus (USUV) seropositive, which provides the first evidence of USUV circulation in Tunisian birds. Our results also showed that the occurrence of anti-flavivirus antibodies increased with decreasing distance to coast, suggesting that doves inhabiting coastal oases were more exposed to flaviviruses compared with those inhabiting inland oases. We also found a significantly higher occurrence probability of antibodies in adult doves compared with young ones, which underlines likely the effect of exposure time. Overall, our results suggest that the laughing dove may be used for WNV and USUV surveillance in southern Tunisia. They also stress the need for investigations combining data on birds and mosquitoes to better understand the ecological factors governing the circulation of flaviviruses in this area.

Keywords: Flaviviruses, oasis, Tunisia, Usutu virus, West Nile virus, wild bird

Biography

Ayadi Tasnim is a Phd student in biology at the faculty of sciences of Gabes "Faculte des sciences de Gabes", Tunisia. Her search field is "eco-epidemiology of pathogens in wildlife in Tunisian oases, and wildlife diseases".

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ISOLATION AND CHARACTERIZATION OF RHIZOBACTERIA FROM BANANA PLANT AS GROWTH PROMOTING AND BIOCONTROL AGENT AGAINST SOIL BORNE PATHOGEN

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The growth promoting bacteria (PGPR) are group of bacteria mainly found in the rhizosphere of plant, having capability to stimulate their health and growth and also defend them from different soil borne pathogens by different mechanisms. In current study, total thirty-four strains of PGPR were isolated from the rhizosphere of healthy banana plants and differentiated on the basis of morphological characteristics and biochemical tests. Phosphate solubilizing ability, capability of auxin production as well as sideroshore competency of PGRP were also investigated for the stimulation of plant growth. Out of 34 isolated strains, six isolates were found positive with high siderophore producing activity, six strains were confirmed having the ability of production of indole acetic acid (IAA), and 17 isolates were found with excellent ability to solubilize the insoluble phosphate. As enzymatic production seemed to have a significant role in inhibition of different pathogens of plants, most of the isolates in current study were found positive for the production of amylases, oxidase, pectinases, proteases, lipases, catalases. Furthermore, seven PGPR isolates also showed the antifungal activity with maximum 51.59% and 50.48% growth inhibition of Fusarium oxysporum f.sp. cubense *in vitro*. Thus, these rhizosphere isolates might be used to endorse plant growth and a good biocontrol for pathogenic fungi in banana growing areas of Pakistan.

Biography

Ibrar Khan has completed his PhD from Ocean University of China. He is an Assistant Professor at Department of Microbiology, Abbottabad University of Science & Technology, Pakistan. He has published more than 20 papers in reputed journals.

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ANTI-CANCER DRUG DESIGN

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The emerging future of antisense oligonucleotides depends on rational modifications of its nucleotide repeating units. Currently the most prevalent design features that are crucial for continued antisense development are nuclease resistance, cellular uptake, hybridization properties, and disruption of RNA functions through terminating events.Very few structure-activity relationship (SAR) studies have been directed to these problems and these have typically used binding affinities and nuclease sensitivities as activity end points rather than in vitro or in vivo biological activities. Further SAR studies may be approached by sequence selection SARs which hold a certain uniform modification type constant (e.g. phosphorothioates) while varying the sequence of the oligonucleotide.The more traditional approach is to modify the oligonucleotide while keeping the sequence constant. This review is concerned with the latter approach and summarizes modifications of the phosphorus atom, pentofuranosyl (sugar) linker, pentofuranosyl ring and its 2'-substituents, and the heterocycles. The review covers the 1989-91 literature of various modified oligonucleotides designed and synthesized to enhance pharmacokinetic and pharmacodynamic properties of antisense oligonucleotides.

Keywords- oligonucleotides, nuclease, RNA, SAR, pentofuranosyl, hetercycles.

Biography

Mohammed Sissaoui has completed his Master's degree In Biochemistry & Molecular Biology at the age of 30 years from The University Of Biskra - Algeria. He is a Medical Laborotry Scientist At the Hospital Of Taoura Souk Ahras - Algeria, and has been serving as a Medical Laboratory Technologist at The Hemodialysis Clinic Souk Ahras - Algeria.

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HOW METABOLIC EVENTS MAY INFLUENCE THE PATHOGENESIS OF A VIRUS INFECTION

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University of Tennessee, USA

Few viruses have properties that permit them to inflict lethal effects or even cause overt clinical disease in all of the hosts they infect. Instead, a broad range of consequences is the usual pattern of events observed. These depend on variables in both the virus and the host. A variable which has received limited study is the influence of host metabolism. We shall show that inhibiting glucose utilization during infection with herpes simplex virus (HSV) has dramatic effects on viral pathogenesis. Inhibition at the time when herpetic lesions occur in the infected cornea results in decreased disease for reasons explained by the differential effects on T cells involved in inflammation. However, inhibiting glucose metabolism from the onset of infection resulted in a syndrome that models human herpes encephalitis with the majority of animals succumbing to lethal encephalitis. This outcome will be explained by the effects of glucose deprivation on innate immunity at the infection site and adaptive CD8 T cell mediated immune changes in the local nerve ganglion. Together these effects result in more viral replication and a failure to maintain viral latency. We shall also describe the effects of manipulating fatty acid metabolism on the stability of herpesvirus latency in the peripheral nervous system. Our results will be discussed in terms of the relevance of metabolic changes that can influence the outcome of other viral infections.

Biography

Barry T. Rouse graduated with a veterinary degree from Bristol, Englane in 1965. After a brief stint as a practitioner, he undertook graduate studies in Canada obtaining MSc and PhD degrees. He then had a two year postdoctoarl experience at the Walter and Eliza Hall Institute of medical research, Melbourne Australia, prior to returning to Canada as an Assistant professor where he established his independant laboratory. In I977 he moved to Tennesses where he is currently the Lindsay Young Distinguished Professor. Doctor Rouse considers himself a viral immunologist and has written >400 articles with citations of >22000 and a H index of 81. He has trained almost 80 trainees and stays in touch with the majority of them. Thanks to his trainees he has won numerous awards for his research accomplishments.

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IGNORANCE, POVERTY, POOR SANITATION AND MALARIA IN GHANA

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Malaria remains a major public health issue in Ghana and Africa as a whole. It is a high killer disease in the country. The endemicity of malaria has threatened health delivery services of the country. Malaria poses a great threat to about 40% of the population of Ghana, especially pregnant women and children under the age of five. The government of Ghana, the national malaria control program, and health workers in Ghana have done a tremendous job in intensifying efforts to prevent malaria by increasing the coverage of insecticide treated bed net and insecticide sprays given to the people especially parents with children under the age of five. Despite all these efforts, malaria prevalence has not decreased as expected. The government and public health officials should get to the root of the matter. Malaria transmission requires the presence of Anopheles mosquitoes, conditions which favor the growth and persistence of these mosquitoes should be looked into. Socio-economic factors, poor sanitation systems: rural areas, stagnant patches of water, streams or ponds are the ideal location for the development of mosquito larvae. All these factors contribute to increasing malaria transmission and high levels of mortality in Ghana. I recommend that the government of Ghana and the public health system should partner with foreign waste management companies, recycling companies, and foreign sanitation officers for assistance in educating the people of Ghana on how to manage their waste and keep their environments clean. Statistics show that poverty correlates with waste and mosquito prevalence and therefore the government should also tackle poverty in the country

Biography

Vivian Nyarko studied from Ternopil State Medical University in Ukraine.

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DETECTION OF DIVERSE VIRULENCE FACTORS IN PHAGES METHICILLIN RESISTANCE *STAPHYLOCOCCUS AUREUS* (MRSA) ISOLATED FROM MASTITIC COWS

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Staphylococcus **aureus is an opportunistic human and animals' pathogen that is found passively colonizing a large percentage of the population primarily on the skin or mammary glands in cows. As the capacity of a given *S. aureus* strain to cause infection varies among strains and is determined by the presence or absence of a large number of virulence-associated genes, some of which are encoded by phages. In order to determine the abundance and characterize the diversity of *S. aureus* strains which caused mastitis in cows in various provinces in Baghdad city, polymerase chain reaction (PCR) was used to detect the presence of *S. aureus* phage-type specific DNA which carry genes coding for diverse virulence factors such as Panton-Valentine leukocidin (PVL), enterotoxins and exfoliative toxins. *Staphylococcus aureus* used in this study was isolated from mastitic cow milk grew on blood agar and methicillin-resistant *Staphylococcus aureus* (MRSA) were selected as indicator strains to investigate the presence of phage segments. The isolates of wild lytic phages from the transient stocks were propagated with the corresponding host clinical MRSA isolates using the plate method. Plates were incubated overnight at 37˚C and plaque morphology and growth characteristics were recorded. Genomic DNA from isolated *S. aureus* phage was extracted and phage segments were investigated. The results showed that the phage content virulence factors in *S. aureus* isolates were enterotoxin A, enterotoxin P, and exfoliative toxin A, toxic shock syndrome toxin-1, lipase. But Panton-Valentine leukocidin gene failed to amplify among strains and the diversity of it in Baghdad city is relatively high. The current study concluded that there is role of bacteriophages in changing ecology and virulence of *S.aureus*.**

Biography

Atheer is microbiologist work in university of Baghdad, veterinary medical college , department of microbiology since nine years. I got my B.sc. in science college university of Baghdad department of biology in 1984 and work in al Mansur factory as a microbiologist for water treatment, then I got MSc in bacteriology in veterinary college and work head department of bacteriology in Al razee center for research and production diagnostic kits in ministry of industry and minerals, after that I got my PhD in virology from university of Almustanseria department of biology and return to my work, head department of virology ,from this time I started to work in research and published my work in many journals. Many research were publish in rotavirus ,cholera salmonella and meningitides and the last paper was published in phage therapy. Last year, I made another workshope about stem cells and its relation with microbiology in 3/3/2015. Last year I am the adviser of Msc student his work about phage therapy And now I have another one who work in genotyping of rotavirus isolated from human and animal in different area from Iraq.

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ISOLATION, PHENOTYPIC AND GENOTYPIC CHARACTERIZATION OF METALLOTOLERANT FUNGAL ISOLATES FROM INDUSTRIAL SOIL

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Soil environment is polluted with heavy metals as a result of increasing industrialization, mining and more advancement in technology. Some of the main contaminations are controlled and uncontrolled discharge of solid and liquid wastes, accidental spillages, herbicides, insecticides, pesticides, agriculture fertilizers, sewage disposal, explosives and tar into the environment. Worldwide major health alarming related to random release of heavy metals into the soil and waters and exposure of extreme concentrations of these heavy metals can cause rigorous harmful effects to animals, plants and human, as they cannot be converted to non-toxic forms and therefore have long-term effects on the flora and fauna. The current study was focused on isolation, phenotypical and genotypical characterization of metallotolerant indigenous fungal strains by using heavy metal contaminated soil of Hattar Industrial Estate, Haripur. First, these isolates were identified based on their morphological and microscopic analysis. Then, they were confirmed by amplification and analysis of their specific internal transcribed spacers (ITS) sequences, allowed discrimination of the metallotolerant indigenous fungal isolates as *Aspergillus niger* M1, *Aspergillus flavus* M2, *Penicillium chrysogenum* M3, *Aspergillus parasiticus* M4, *Pencillium notatum* M5, *Aspergillus terreus* M6, *Fusarium solani* M7 and *Aspergillus fumigatus* M8. Furthermore, all the isolated fungal strains were found highly resistant to heavy metals especially to Cadmium (cd), Copper (cu), Lead (Pb) and Mercury (Hg). Thus heavy metal contaminated soil might be considered as a precious natural source of resistant fungal strains, which can be used significantly as a bioleaching or bioremediation tool.

Biography

Ibrar Khan has completed his PhD from Ocean University of China. He is an Assistant Professor at Department of Microbiology, Abbottabad University of Science & Technology, Pakistan. He has published more than 20 papers in reputed journals.

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