EuroSciCon

DAY 1

Scientific Tracks & Abstracts

16th EuroSciCon Conference on

IMMUNOLOGY

March 11-12, 2019 | Amsterdam, Netherlands

DAY 1

March 11, 2019

Sessions

Cellular Immunology | Immunotherapy And Vaccine | Microbial Immunology | Neuroimmunology and Neuroinflammation | Immunopathology | Veterinary Immunology | Microbial Immunology | Mucosal immunology | Immunological Clinical Practices &Trials

Session Chair
Pichaet Wiriyachitra
Asian Phytoceuticals Public Co., Ltd., Thailand

Session Co-Chair
Michel Leclerc
Orleans University, France

Session Introduction

Title: **Postnatal ethanol exposure induces chronic neuroinflammation and impedes hippocampal-dependent synaptic plasticity and long-term memory in adolescent rats**
Derick Lindquist, The Ohio State University, Columbus

Title: **The Immunology of Tuberculosis**
Sudha Bansode, Shankarrao Mohite College, India

Title: **Regulatory Roles of NLRC4 in Eosinophilic Functions**
Ceren Ciraci, Istanbul Technical University, Turkey

Title: **Effectienevss of Albendazol against Viability of Entamoeba histolytica in experimental animals**
Abdulsalam Mohamad Kasim Al-Mukhar, College of medicine,University of Mosul, Iraq

Title: **Comparison of malleination diagnostic test and immunofluorescence in screening Glanders**
Nader Mosavari, Agricultural Research, Education and Extension Organization (AREEO), Iran

Title: **Molecular detection of acute virus infection in children hospitalized with diarrhea in nort india, india during 2014-2016**
Ali ilter Akdag, Jamia Hamdard University, India

Title: **Class I PI3K isoform regulates NOD1/2 mediated bacterial amino acid sensing pathway and control gut homeostasis under inflammatory conditions**
Laura Medrano Gonzalez, Queen Mary University of London, United Kingdom

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Lindquist D H et al., J Clin Immunol Allergy 2019, Volume:5
DOI: 10.21767/2471-304X-C1-008

POSTNATAL ETHANOL EXPOSURE INDUCES CHRONIC NEUROINFLAMMATION AND IMPEDES HIPPOCAMPAL-DEPENDENT SYNAPTIC PLASTICITY AND LONG-TERM MEMORY IN ADOLESCENT RATS

Lindquist D H[1,2], Dause T J[1], Pochio J M[2] and Goodfellow M J[1]
The Ohio State University

Offspring of women who drink while pregnant may suffer from fetal alcohol spectrum disorders (FASD), which includes pervasive and persistent alterations in behavior and cognition. FASD is modelled in rat pups via administration of ethanol (5 g/kg/day) over postnatal day 4 to 9, comparable to the human third trimester. Ethanol induces chronic neuroinflammation in the developing hippocampus, activating the COX-2 enzyme in microglia and the release of pro-inflammatory cytokines (e.g., IL-1β). We recently demonstrated a significant reduction in cytokine gene expression in ethanol-exposed (5E) rats given ibuprofen (COX-2 inhibitor) concurrent with ethanol and, as adolescents, amelioration of trace fear conditioning (TFC) memory deficits. Mast cells (MCs), a novel class of brain-resident immune cells, are also activated by postnatal ethanol. Indeed, postnatal ethanol induces a significant increase in the proportion of degranulated MCs and morphologically activated microglia in the hippocampus of male 5E rats. Both effects are blocked by central injections of cromolyn, a MC degranulation inhibitor, just prior to daily ethanol administration. Intriguingly, IL-1β plays a critical role in the maintenance of NMDA receptor-dependent long-term potentiation (LTP) and the consolidation of long-term memory. Ethanol-induced inflammation in the neonate brain of 5E rats was hypothesized to enhance hippocampal IL-1β release during TFC, impeding synaptic plasticity and memory formation. Our most recent findings confirm this prediction—IL-1β gene and protein expression is elevated in the hippocampus of male (but not female) 5E rats in the 24 hr period following TFC. Pre-training administration of Kineret, an IL-1 receptor antagonist, normalized IL-1β signalling and enhanced long-term memory and TFC test performance in male 5E rats. Collectively, results signify third trimester-equivalent ethanol exposure induces chronic hippocampal neuroinflammation leading, in later life, to aberrant learning-dependent synaptic plasticity and long-term memory in male, but not female, rodents.

Biography

Lindquist D H has received his PhD in Behavioral Neuroscience from Yale University in 2004. Following Postdoctoral Work at Indiana University and the University of Kansas, he joined the Psychology department at The Ohio State University in 2010. Over his career, he has published approximately 20 papers in reputed Neuroscience journals related to the neurobiology learning and memory, neurodevelopment and neuroinflammation.

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Sudha Bansode, J Clin Immunol Allergy 2019, Volume:5
DOI: 10.21767/2471-304X-C1-008

THE IMMUNOLOGY OF TUBERCULOSIS

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Tuberculosis (TB) is one of the commonest genuine irresistible overall sickness, is one of the commonest reasons for genuine respiratory inability and torments right around 10 million individuals every year. The illness, fuelled by HIV contamination and destitution, is wild in Africa. Medication safe TB compromises to destabilize TB control in a few different locales of the world. Albeit a few elements including HIV contamination and financial hardship encourage the improvement of TB, contributing components incorporate problematic indicative instruments, absence of modest and viable new restorative mediations and the absence of a broadly accessible powerful antibody. Notwithstanding, a superior comprehension of the invulnerable pathogenesis of TB can drive the advancement of new immunodiagnostic apparatuses, quicken and encourage the assessment of new helpful intercessions and is imperative to the improvement of a successful antibody. There have been a few astounding distributed audits on the immunology of TB.3-7 Here, nonetheless, we will refresh the peruser on the most recent new advancements in the field and, specifically, center around clinically significant and translational parts of TB immunology. It has been recommended that the advancement of TB is because of disappointment of safe control or improper resistant direction. In addition, a great part of the lung harm related with TB is have intervened safe pathology instead of because of M. tuberculosis-inferred harmfulness factors. The unsettling influence in insusceptible control may hypothetically include the disruption of a defensive Th1 reaction, including the age of CD8+ CTL, by a few systems including Th2-like cytokines, TGF-β, Treg or other administrative cells, and up to this point undescribed instruments harassing the downstream defensive Th1 pathways. The perception that those with dynamic TB require a half year of treatment regardless of practically 95% of the bacterial sanitization happening inside the initial 2 weeks of treatment has never tastefully been clarified. In this way, increasingly powerful treatment may require regulation of the safe framework and a change far from an immunopathologic phenotype to a defensive one. Reestablishing this immunoregulatory parity may take a while. Endeavors to reestablish mycobactericidal resistance with IL-2 and IFN-γ have been baffling. Operators, for example, steroids, thalidomide and TNF-α enemies have additionally been contemplated. It is theorized that immunomodulatory specialists may drive a proper Th1 reaction while simultaneously killing on or the fitting administrative cells. For instance, M. vaccae may drive a Th1 reaction and CD8+ CTL yet at a similar turn on CD25CD45Rblow Treg cells. Notwithstanding, clinical preliminaries of M. vaccae have been frustrating. It has been proposed that this disappointment might be identified with the organization of a solitary instead of different portions, which is utilized with accomplishment in China. An ongoing investigation of various portion M. vaccae in HIV-tainted African members, and distributed in theoretical structure, showed a decrease in mycobacteraemia in the intercession gathering. In a murine model IVIG was appeared to significantly enhance mycobacterial disinfection however there are no human information. There are a few captivating primer reports, including little quantities of patients, that a restrictive concentrate of a few plants from the Ukraine (Immunoxel) might be related with enhanced results in medication delicate and tranquilize safe TB. A few other potential immunomodulatory specialists including Mycobacterium w, DNA antibody encoding HSP65 of M. leprae, HE2000, RUTI, SCV-07 SciCLone, hostile to IL-4 and GM-CSF are depicted in Table, and checked on in detail in Churchyard et al. The estimation of these immunomodulatory operators stay indistinct and very much led forthcoming clinical preliminaries are required to clear up their utility for routine use. The development of broadly tranquilize safe TB had strengthened the earnestness for these investigations to be led.

Biography

Sudha Bansode is an Associate Professor in Zoology at Shankarrao Mohite College, Akluj, Maharashtra State, India. Recently she has completed her PostDoctoral Studies at University of California, Riverside, USA. She is an active Researcher and passionate Teacher in India. She has been published above 25 research papers in International Journals. She is interested on bone research. Also she has honor of Distinguished Editorial Board Member of several International Journals. She is an author of "Textbook Histological Techniques" and "Outlines of Physiology". Now she is working on another own reference book "Rhythms in Freshwater Crustaceans". She is a University recognized research guide for PhD students in India. She was an invited Indian Speaker of Oxford Symposium on 27-29 August, 2014 at Balliol College, Oxford, United Kingdom and cell signaling and cancer therapy-International Conference at Double Tree, Hilton Chicago on 27-28 September 2017. She was an Academic Visitor of Bangkok- Thailand, Colombo-Sri Lanka, Daira-Dubai-UAE. Her recent intellectual Interaction is with many International Professional groups.

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Ceren Ciraci et al., J Clin Immunol Allergy 2019, Volume:5
DOI: 10.21767/2471-304X-C1-008

REGULATORY ROLES OF NLRC4 IN EOSINOPHILIC FUNCTIONS

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The immune response is so dynamic that its intensity and nature change over time. The cells of the innate immune system signal through cytokines that coordinate and shape the characteristics of adaptive immunity. Nucleotide oligomerization domain (NOD)-like receptors (NLRs) is an intracellular receptor family with 22 members in human and 34 members in mice. Although they are mostly considered as the components of innate immunity, they have been reported to set a gate between innate and adaptive immunity by countless research. Of all the NLRs that have been discovered to date, AIM2, NLRP1, NLRP3 and NLRC4 are known to form an inflammasome complex. A typical inflammasome complex is a multiple protein complex that is composed of ASC (Apoptosis associated speck-like protein containing a CARD) adaptor protein, caspase-1 enzyme and the NLR protein. Following inflammasome activation, IL1B and IL18 are cleaved by caspase-1 and released to the extracellular environment. In this study, we examined how NLRC4, a member of NLR family, regulates the immune responses. The preliminary data from in vivo suggested a role for NLRC4 in eosinofilic functions during asthma and allergy. Based on these preliminary data, we characterized NLRC4 further in vitro as the number of eosinophils are significantly increased during asthma, allergic diseases and parasitic infections in healthy individuals or wild type mice. In our case, we observed a significant reduction in eosinophils of NLRC4 deficient mice. Then we went ahead and studied NLRC4 in a human cell line of eosinophils called EoL-1 for mechanistical studies. Even though, NLRC4 is known to form an inflammasome complex, our preliminary data suggest no change in ASC adaptor molecule, but induction of IL1B, therefore, NLRC4 in eosinofils may not be interacting with ASC, but most likely be interacting with caspase-1 or caspase-8, since we were able to induce IL1B after NLRC4 ligand treatment in EoL-1 cells, an eosinofilic cell line. We plan to expand these experiments to primary human eosinofils and investigate the eosinophilic functions in the context of NLRC4. Our findings might be an important asset to treat the severe clinical symptoms deriving from eosinophilia.

Biography

Ceren Ciraci has completed her PhD from Iowa State University and Postdoctoral Studies from University of Iowa Inflammation Program. She is currently serving as a Junior Faculty at Istanbul Technical University.

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AbdulSalam M. Al-Mukhtar, J Clin Immunol Allergy 2019, Volume:5
DOI: 10.21767/2471-304X-C1-008

EFFECTIENEVSS OF ALBENDAZOL AGAINST VIABILITY OF *ENTAMOEBA HISTOLYTICA* IN EXPERIMENTAL ANIMALS

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Objective: Intestinal amebiasis is still an important health problem in developing countries of the world. One of the most issues for future biomedical research is the development of antimicrobial resistant, in order to search for alternative new antiamoebic drugs. A study was carried out to evaluate the efficacy of albendazol on the viability of *Entamoeba histolytica* clinical isolate from human which used for experimental animals.

Material and Methods: All experimental animal models (30 albino mice and 30 rabbits),divided into 3 groups,each group with either 10 mouse or 10 rabbits, were orally infected with *E. histolytica* (clinical isolate), then after 7 days they were given drugs (Metronidazol or Albendazol) daily according to body weight prepared in advance for 5 days duration and in addition to the controls without drugs. Stool specimens of each group were examined microspically for viable trophozoites,and the number of these trophozoites were counted with haemocytometer chamber, as compared to untreated and treated groups. Statistical methods used was student t-test.

Results: The results showed infection of ***E.histolytica*** was able to be intiated in rabbits only. Albendazol and metronidazol were highly effective(100%) on treatment of infected groups of rabbits (table I). Trphozoites of *E. histolytica* was highly sensitive to albendazol (25% viability), or to metronidazol (22.7% viability) at a dose of 400 mg / kg / day and 250 mg / kg / day respectively,which was significant in relation to the control 500% viability(table II). However, the differences were significant at the level (p<o.o1).

Conclusions: The present study showed that the newly used albendazol is very effective anti-amebic drug as metronidazol in rabbits.

Biography

Abdulsalam Mohamad Kasim Al-Mukhtar has completeted his Ph.D. at age 37 years, from Salford University (England 1980), more than 30 research published in different journals,and he was working as lecturer in dept. of microbiologl,college of medicine, university of Mosul,Mosul, Iraq for 44 years ago.

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Nader Mosavari et al., J Clin Immunol Allergy 2019, Volume:5
DOI: 10.21767/2471-304X-C1-008

COMPARISON OF MALLEINATION DIAGNOSTIC TEST AND IMMUNOFLUORESCENCE IN SCREENING GLANDERS

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Burkholderia mallei **is the causative organisms of glanders. Although now rare in Western countries, organism has recently gained much interest because of their unique potential as bioterrorism agent. The importance of design and the use of rapid diagnostic techniques have been doubled considering its widespread prevalence in the Middle East, especially in Iran, the disease cause being imported from the neighboring countries and also very important use of the disease as a biological weapon. The present study was performed on 100 serum samples of different equines. Malleination test was performed and serums were analyzed using indirect immunofluorescence. *Burkholderia mallei* bacterium was cultured in glycerinated TSA and TSB media and was identified by molecular techniques. After preparation and inactivation of the bacterial suspension by heat, bacterial smear slides were prepared and were fixed by different fixators. After the addition of tested horse serums and anti-horse conjugated with fluorescein, slides were observed by immunofluorescence microscopy. The malleination diagnostic method showed that there were 8 positive, 3 suspicious and 89 negative samples out of 100 serums. However, when the indirect immunofluorescent was carried out a total of 89 and 11 samples were identified to be negative and positive, respectively. It was concluded that indirect immunofluorescent method is quick and simple for the diagnosis of glanders.**

Biography

I'm head of Tuberculosis and Glanders Department of Razi Vaccine and Serum Research Institute in Iran. I produce all type of Tuberculin and also Mallein. Additionally our team produced good absorbed ELISA kit for Paratuberculosis and also ELISA kits for sheep and bovine Brucellosis too.

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DOI: 10.21767/2471-304X-C1-008

MOLECULAR DETECTION OF ACUTE VIRUS INFECTION IN CHILDREN HOSPITALIZED WITH DIARRHEA IN NORTH INDIA DURING 2014-2016

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Jamia Hamdard University, India

Background: The viruses (eg: rotavirus, astrovirus, and adenovirus) are responsible for diarrhea in children, basically those are <5 years old. Detection of the entire virus is crucially important to the development of the effective cure. This study aimed to determine the prevalence of common viruses in children with <5 years old presented with diarrhea to the Lala Lajpat Rai Memorial Medical College (LLRM) centre(Meerut) North India, India.

Methods: Total 312 fecal samples were collected from diarrheal children (duration 3 years: in year 2014 (n=118), 2015 (n=128) and 2016 (n=66)) of <5 years of age who presented with acute diarrhea at the Lala Lajpat Rai Memorial Medical College (LLRM) centre(Meerut) North India, India. All samples were analyzed for the presence of rotaviruses, adenovirus and astrovirus using EIA/ RT-PCR.

Results: In 312 samples from children with acute diarrhea, viral agent was found rotavirus A was the most frequent virus identified (57 cases; 18.2%), followed by astrovirus in 28 cases (8.9%), adenovirus in 21 cases (6.7%). Mixed infections were found in 14 cases, all of which presented with acute diarrhea (4.48%).

Conclusions: These viruses are a major cause of diarrhea in children <5 years old in North India. Rotavirus A is the most common etiological agent, followed by astrovirus. This surveillance is important to vaccine development of the entire population.

Biography

Ali ilter Akdag is pursuing his PhD at Jamia Hamdard University since three years. His research area is Molecular Virology and Vaccinology. He works on acute gastroenteritis viruses, like rotavirus, adenovirus, astrovirus, norovirus, and sapovirus. He has completed MSc in Zoology (2013-2015) from Osmania University in Hyderabad, India. He won many certificates and awards. He has actively participated national and international conferences.

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Laura Medrano Gonzalez et al., J Clin Immunol Allergy 2019, Volume:5
DOI: 10.21767/2471-304X-C1-008

CLASS I PI3K ISOFORM REGULATES NOD1/2 MEDIATED BACTERIAL AMINO ACID SENSING PATHWAY AND CONTROL GUT HOMEOSTASIS UNDER INFLAMMATORY CONDITIONS

Laura Medrano Gonzalez and Ezra Aksoy
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Phospoinositide-3-kinases (PI3Ks) are important evolutionarily conserved lipid kinases, regulating organismal pathways essential for cell growth, division, proliferation, and are often deregulated in cancer and inflammation. Colorectal and gastric cancers are reported to have high rates of activating mutations in the ubiquitously expressed gene encoding PI3Kα. PI3Ks regulate PRR-driven innate immune responses however how PI3Kα couples to intestinal epithelial cell (IEC) functions and gut homeostasis is not well understood. Intestinal epithelium is the largest and fastest regenerative tissue with protective barrier-type function. Disruption of the intestinal barrier due to genetic and/or environmental factors results in inflammatory bowel disease (IBD). NOD2 is the first identified susceptibility gene in IBD, and regulates innate immune responses to bacteria-derived dipeptides. In IECs, NOD1/2 was reported to regulate intestinal stem cell renewal and contribute to wound healing response. Since PRR signalling plays an important role in IEC division and self-renewal under stress conditions, upon injury and infection, we investigated whether IEC-intrinsic PI3Kα regulates NOD1/2 signalling and is involved in responses to gut protective responses, following gut injury. Herein by genetic and pharmacological targeting in vivo and in vitro, we showed that PI3Kα couples to NOD1/2 pathways, activated by bacterial dipeptides and induces mTOR signalling, analogous to nutrient sensing of eukaryotic amino acids. Strikingly, conditional inactivation of PI3Kα in adult mice result in lethality shortly following DSS-induced injury, while not showing gross differences in inflammation. Our findings demonstrate PI3Kα is an essential in intestinal integrity, function and IEC-intrinsic PI3Kα coupling to NOD1/2 mediated mTOR signalling adds a new layer to the complexity to the symbiotic host microbiome interactions even under stressful conditions.

Biography

Laura Medrano Gonzalez has completed her degree in Genetics from Universitat Autonoma de Barcelona. During her four year degree, she was awarded with an international studentship to work in Professor Andy Waters' research group at the Institute of Infection, Immunity and Inflammation, University of Glasgow. After her experience studying a protein complex related to sexual development of malaria's parasite, she was accepted at Imperial College London to pursue her research career with an MSc in Immunology. During her Master's-project, she joined Professor Peter Openshaw's laboratory in order to perform independent research, experimental setup and analysis focusing on B-cell responses against RSV. She joined Dr Ezra Aksoy's pioneering research group working in mucosal immunity and inflammation at the William Harvey Research Institute. She is currently a PhD candidate investigating the isoform-selective roles of PI3Ks and innate immune receptor signalling in the intestinal epithelial cells (IECs) and has presented her research data in several international conferences.

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