Joint Event on

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Global Summit on

IMMUNOLOGY AND CELL BIOLOGY

&

Global Congress on

BACTERIOLOGY AND INFECTIOUS DISEASES

June 25-26, 2018 | Amsterdam, Netherlands

DAY 1

Keynote Forum

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June 25-26, 2018 | Amsterdam, Netherlands

Jyotsna Shah
IGeneX Inc., USA

Biography

Jyotsna Shah has done her BSc and MSc in Biological Sciences in the UK and her PhD in diagnostic immunology from Nairobi University, Kenya. She then joined the International Laboratory for Research on Animal Diseases (ILRAD) as a post-doctoral scientist where she started the first DNA sequencing laboratory in East Africa. On completion of her fellowship, she joined Harvard University, Department of Tropical Medicine, as a research fellow and continued to work on the development of molecular tools for diagnosis of parasitic diseases. Presently she is the President and CEO of Igenex Inc., Palo Alto, CA, USA.

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PANEL APPROACH FOR DIAGNOSIS OF BORRELIOSIS (LYME DISEASE AND RELAPSING FEVER)

Borreliosis is caused by two groups of Borrelia, *B. burgdorferi* group and the relapsing fever Borrelia group. Until recently it was believed that *B. burgdorferi* group is the only group that causes Lyme-like symptoms. However we now know that relapsing fever borrelia too causes Lyme-like symptoms. Symptoms caused by both these Borrelia groups are often confused with MS, Chronic fatigue, osteo-arthritis, and ALS. Therefore it is necessary to perform appropriate diagnostic tests to differentiate Borreliosis from other diseases. Thus we have developed highly sensitive and specific immunoblots to detect and differentiate the two groups of Borrelia. Based on our studies in US the specificity of the imunoblots is greater 92% for IgM and 100% for IgG. Using these immunoblots we have demonstrated that both *B.burgdorferi* and relapsing fever Borrelia are also present. This is based on a study performed on over 500 patients.

Note:

Hiroshi Ohrui
Yokohama University of Pharmacy, Japan

Biography

Hiroshi Ohrui received PhD degree (1971) from The University of Tokyo. He joined Riken (1966) and moved to Tohoku University (1981). He moved to Yokohama University of Pharmacy (2006). He worked for Dr. J J Fox at Sloan-Kettering Institute for Cancer Research (1972-1973) and for Dr. J G Moffatt at Syntex Research (1973-1974). He received several awards including Japan Academy Prize (2001). His research interests cover organic synthesis, chemical biology, and chiral discrimination.

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EFDA: AN EXTREMELY EXCELLENT ANTI-HIV MODIFIED NUCLEOSIDE, -FROM DESIGN TO THE CURRENT CLINICAL TRIAL RESULTS

4'-C-Ethynyl-2-fluoro-2'-deoxyadenosine (EFdA) has attracted much attention due to its extremely excellent anti-HIV activity, for example, EFdA prevents the emergence of resistant HIV mutants, and is over 400 times more active than AZT and several orders of magnitude more active than the other clinical reverse-transcriptase inhibitory 2', 3'-dideoxy-nucleoside drugs, very low toxic, very long acting, very useful for the prevention of HIV-infection. EFdA is now under clinical investigation by Merck & Co. as MK-8591. In the beginning, a general idea for the development of anti-viral modified nucleosides will be presented, and then the development of EFdA will be discussed and the clinical results by Merck will be also presented. For the design of the modified nucleoside which could solve the problems that the clinical drugs have (emergence of drug-resistant HIV mutants, adverse effect by drugs, necessity to take quite a few amount of drugs), the following working hypotheses were proposed. They are: The way to prevent the emergence of drug-resistant HIV mutants, the way to decrease the toxicity of modified nucleosides, the way to provide the modified nucleoside with stability to both enzymatic and acidic glycolysis for long acting. 4'-C-substituted-2'-deoxynucleoside (4'SdN) was designed to meet the hypotheses (1), (3), and the additional modification of 4'SdN was performed to meet the hypothesis. The details of the hypotheses and the reasons for the design of 4'SdN will be discussed. To prevent the deamination of adenine base by adenosine deaminase, a fluorine atom was introduced at the 2-position of adenine. Finally, EFdA, modified at the two position (2 and 4') of the physiologic 2'-deoxyadenosine and has extremely excellent anti-HIV activity, was successfully developed.

Note:

Gilberto Filaci
University of Genoa, Italy

Biography

Gilberto Filaci is a PhD holder, is Vice-Director of the Centre of Excellence for Biomedical Research and full Professor of Laboratory Techniques for Medicine at the University of Genoa, Italy. He is author of more than 90 publications cited over 2500 times, and his publication H-index is 28.

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CD8+ TREG INVOLVEMENT IN THE PATHOGENESIS OF AUTOIMMUNE, CANCER AND HIV INFECTIOUS DISEASE

Treg constitute a complex network of T cell subtypes which regulate effector immune responses. Although CD4+ Treg are most known, in the recent years several CD8+ Treg subpopulations have been characterized. We identified the exact phenotype of one of these CD8+ Treg subsets (that is CD8+CD28-CD127-CD39+), allowing us to specifically recognize these cells *in vivo* and to study them *ex vivo*. Altered frequency or function of these CD8+ Treg appears to be pathogenically involved in autoimmune diseases. Moreover, these cells heavily infiltrate tumors and may circulate in the peripheral blood of cancer patients. These findings suggest their direct involvement also in the pathogenesis of cancer through the fostering of tumor immune escape. Recently, remarkable expansion of CD8+CD28-CD127loCD39+ Treg, whose frequency correlated with both clinical disease and signs of chronic immune cell activation, was observed in HIV patients.

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Stef Stienstra, Virol Res J 2018, Volume 2

Stef Stienstra
Command Royal Dutch Armed Forces
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Biography

Stef Stienstra works internationally for several medical and biotech companies as Scientific Advisory Board Member and is also an active reserve-officer of the Royal Dutch Navy in his rank as Commander (OF4). For the Dutch Armed Forces he is CBRNe specialist with focus on (micro) biological and chemical threats and medical and environmental functional specialist within the 1st CMI (Civil Military Interaction) Battalion of the Dutch Armed Forces. For Expertise France he is now managing an EU CBRN CoE public health project in West Africa. He is visiting Professor at the University of Rome Tor Vergata giving lectures for the CBRN Master study. He has finished both his studies in Medicine and in Biochemistry in Netherlands with a doctorate and has extensive practical experience in cell biology, immuno-haematology, infectious diseases, biodefense and transfusion medicine. His natural business acumen and negotiation competence helps to initiate new successful businesses, often generated from unexpected combinations of technologies.

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Note:

THE THREAT OF ZOONOTIC DISEASES AND EBOLA VIRUS DISEASE SPECIFICALLY

Public health systems are not always prepared for outbreaks of infectious diseases. Although in the past several public health institutes, like the French 'Institut Pasteur' and the Dutch 'Tropeninstituut', were prominent surveyors of infectious diseases, the investments in worldwide public health have decreased. Now more attention is given to curative healthcare compared to preventive healthcare. The recent Ebola Virus Disease outbreak in West Africa initiated a new wave of interest to invest in Worldwide Public Health to prevent outbreaks of highly contagious diseases. Zoonotic diseases are threatening as the population does not have natural nor artificial (from vaccination) immune response to new diseases like in the Ebola virus disease outbreak in 2014. The new strain of the Ebola Virus in West Africa was slightly less lethal, compared to other Ebola Virus strains, but the threat of spreading was far bigger as it had a longer incubation time. Most public health systems are not trained well enough to mitigate highly infectious and deadly disease outbreaks. NGO's helping to fight the outbreak are often better trained in curative treatments and have less experience with biological (bioweapon) threats for which the military are trained for. The UNMEER mission was unique in this. It was a setting in which military and civilian actors cooperate in fighting a biological threat. Protection is essential for health workers. Smart systems must be developed to prevent further spreading of the disease, but it is not only the biosafety, which must be considered, but also the biosecurity, as misuse of extremely dangerous strains of microorganisms cannot be excluded. Several zoonotic infectious diseases, like anthrax, smallpox and hemorrhagic fevers are listed as potential bioweapons. Therefore both biosafety and biosecurity have to be implemented in all measures to fight outbreaks of highly infectious diseases.

EFFECTS OF ENVIRONMENTAL TOXINS (PESTICIDES, INDUSTRIAL CHEMICALS, COMMON HOUSEHOLD CHEMICALS, COSMETICS AND COSMECEUTICALS) ON THE GROWING ESTROGEN-OBESITY-ALLERGY-ANXIETY/DEPRESSION EPIDEMICS AND ENDOCRINE AND IMMUNE RESPONSES

Benoit Tano
Integrative Immunity Health System
USA

Biography

Benoit Tano is a specialist, pioneer, and the Minneapolis area's foremost expert in the field of Integrative Immunity. He is the founder of Integrative Immunity Health System, PC located in Edina, Minnesota. He is Johns Hopkins-fellowship member trained in allergy and clinical immunology and authored the number one bestselling book, "The Layman's Guide to Integrative Immunity" (2016). He combines his vast expertise in allergy and clinical immunology and in hormone imbalance syndrome to treat the root causes of 21st century chronic diseases.

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Note:

Background: In early 1980s, the Centers for Disease Control and Prevention (CDC) through its EIS, discovered that several US states were gaining weight abnormally. In 1984, the CDC created the Behavioral Risk Factor Surveillance Survey (BRFSS) to investigate. In 1985, the CDC published the first obesity map based on BRFSS data. Obesity has become epidemic not only in North America, but in the whole world. Concurrent to the obesity epidemic, we now have the estrogen, allergy, and anxiety/depression epidemics. In 1992, The USGS published the pesticides maps and in 2001, the CDC started biomonitoring. The chemicals found in the blood and urine in individuals from different US states are reported in the CDC fourth report. This report is updated every two years and continues to show a growing chemical list overtime.

Objective: We sought to establish the relationship between environmental toxins, the endocrine system, and the immune system that may explain the plethora of 21st century chronic diseases.

Methods: We used an evidence-based approach called integrative immunity and the Healthcare Utilization Project (HCUP) database, the CDC obesity maps, the USGS pesticides maps, chemicals found in the CDC fourth report, and medical geography techniques, to make sense of current estrogen-obesity-allergy-anxiety/depression epidemics. Four key diagrams were conceived to relate pesticides to obesity and comorbidities, and pesticides to environmental and food allergies.

Results: We demonstrate that the areas of the heaviest pesticide spray correspond to the areas of the heaviest obesity, morbidity, mortality, allergy and anxiety/depression and even divorce rates. Environmental toxins cause hormonal imbalance that leads to obesity and its comorbidities. Some of these toxins such as xenoestrogens have receptors on the mast cells and basophils, and cause histamine and leukotriene release that are responsible for nasal, respiratory, cutaneous, and food reactions. Acetylcholine esterase inhibitor chemicals cause depletion of neurotransmitters such as dopamine, norepinephrine and epinephrine to create mood swings. Other chemicals stimulate the immune cells to produce antibodies linked to autoimmune diseases.

Conclusion: There is a vicious cycle that goes from environmental toxins to chronic diseases. Understanding the mechanisms through which toxic chemicals affect the human body offers opportunities for adequate treatments.

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Essam Badawy, Virol Res J 2018, Volume 2

Essam Badawy
Minia University, Egypt

Biography

Essam Badawy has completed his MD from Minia University, Egypt and ITS THESIS - studies in Cairo University School of Medicine. He is Senior Consultant Internal Medicine and Professor of Internal Medicine and Clinical Immunology, Faculty of Medicine, Minia University. He has published more than 24 papers in reputed journals and has been serving as an Editorial Board Member of repute and reviewer in some international journals.

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THE CLINICAL CHARACTERISTICS AND OUTCOME OF H1N1 PNEUMONIA PATIENTS WITH AND WITHOUT ACUTE RENAL INJURY

Currently, little information exists about the impact of kidney injury and resource utilization in the form of renal replacement therapy in critically ill patients with H1N1 infections. 40 patients who were living in or visitors to Makkah region, admitted to the hospital and revealed confirmatory H1N1 infection, pneumonia and acute renal injury, were submitted to rRT-PCR. Severity of illness was assessed by using APACHE II, SOFA score, MOD score XR chest score, PaO2/FIO2 and Co-morbidities were recorded. Acute renal injury is an adding impact of increasing the mortality rate of H1N1 pneumonia patients and may be related directly to the infection by this virus or complication to it which may be explained by severe hypoxia secondary to severe lung injury, multi organ dysfunction. A high mortality in middle and old- aged patients with underlying medical co-morbidities was associated with higher symptoms severity, APACHE II, SOFA, MODS and XRC scores. Early recognition of the disease as well as prompt medical attention to provide opportunities aiming to limit the progression of the illness and to reduce the mortality. Prospective and controlled clinical trials are needed for clarifying the effectiveness of the early treatment and protection by using H1N1 vaccine.

Note:

Khadija Rafiq
Thomas Jefferson University, USA

Biography

Khadija Rafiq has her expertise in immunology and cellular biology. Over the past several years she has been investigating how the immune system affects cardiac myocyte growth and cardiac function with a focus on signaling molecules that are activated by inflammatory proteases. Her research interest focuses on elucidating the role of inflammatory serine proteases in the development of diabetic cardiomyopathy. It is well known that inflammation plays a role in the development of diabetic cardiomyopathy. The goals of her research are to identify novel signaling mechanisms that control cardiac cell growth and apoptosis.

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IMMUNE SYSTEM AND HEART FAILURE

Heart failure (HF) is the final clinical entity of many diverse disease causes and mechanisms. HF refers to a state of inadequate cardiac function to maintain systemic perfusion at a rate commensurate with the requirements of the body at rest or during states of increased demand. Mortality is comparable to that of the most common cancers, with a 50% 5-year survival. Despite advances in our understanding of the pathophysiology and treatment of HF, this malady continues to be a major public health burden with an enormous impact on the cost of healthcare. Current research efforts are focused on understanding novel mechanisms and signaling pathways. Immune activation and inflammation have been postulated as important pathophysiological events in this process. Cardiac inflammation is major pathophysiological mechanism operating in the failing heart, regardless of HF etiology. Experimental and clinical studies have suggested that inflammation in the development of heart failure is related to an imbalance between pro-inflammatory and anti-inflammatory cytokines. Furthermore, disturbances of the cellular and humoral immune system are frequently observed in heart failure. Therefore, it is essential to understand the immunological mechanisms involved in HF in order to develop useful therapies against the life threatening disorder.

Note: