DAY 1

Keynote Forum

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Michel Leclerc, J Clin Immunol Allergy 2019, Volume:5
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Michel Leclerc
University of Orléans, France

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THE SEA STARS OPHUIRID'S IG KAPPA GENE

The main point of the sea star immunology and the ophuirid immunology remain the discovery of the invertebrate primitive antibody (IPA), the Ig kappa genes, with Ig sites which imply the complement system to be initiated. Nine component genes from C1 to C9 have been updated these last years, in sea star genome, in ophuirid one. We have discovered, an Fc receptor gene, a Fab gene in these same invertebrate for the first time which corroborate the presence of IPA. The transcriptomes are given. It is the first time; we can speak of adaptative immunity, in Echinoderms, in invertebrates. Since many years, even since a century long, the notion of antibody was out of the speech of immunologists. To speak of that made you as an outlaw. It is time to look with genomic studies which confirm which assert now evidence that three classes of Echinoderms out of 5 possess an Ig kappa gene, a Fc receptor gene. These classes are: the Asterids with *Asterias rubens*, the Ophuirids with Ophiocomina nigra and the Crinoids with Antedon bifida. Furthermore, these same classes present other similarities with human genome: they share IRF2, IRF4, IRF8, IFNG genes in their genomes. As you can see these data corroborate the high degree of evolution of Echinoderms. But is it evolution? or evaluative creation?.

Biography

Michel Leclerc has obtained his Masters in Biological Sciences from the University of Orleans. He possessed a D E S in Biology and then a *Doctorat es Sciences* in 1977 in this last University. Later he collaborated with the Institut Pasteur of Paris as a Co-Researcher for five years and then directed the laboratory of Immunology of Invertebrates, in the University of Orléans. He has been the first to culture invertebrate cells in vitro and more particularly sea star lymphocytes. In 1975, he spoke already in a paper at the Science Academy of France of Invertebrate antibody in a world where this last notion was forbidden! Again he is the first to immunize sea stars with various antigens. In the years 1980 he published a paper at *Eur J Immunol* with Francis Delmotte et al, about the isolation and purification of antibody-like substances in the sea star *Asterias rubens*. Then he started working on Genomics: he discovered the sea star Ig kappa gene (2014) with 2 Ig sites. It is the first time we can speak of IAP (Invertebrate Primitive Antibody), so the Fab gene, the Fc receptor gene, the Cr gene. Besides the sea star innate response, he spoke of adaptive immunity in an invertebrate for the first time. He has 170 international publications.

mleclerc45@gmail.com

Pichaet Wiriyachitra, J Clin Immunol Allergy 2019, Volume:5
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Pichaet Wiriyachitra
Asian Phytoceuticals Public Company Limited,Thailand

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NOVEL PHYTOCEUTICAL FORMULA FOR IMMUNOTHERAPY OF HIV/AIDS AND CANCER

Operation BIM (balancing immunity) Research Project was established with the goal of achieving a new dimension of health care utilizing refined extracts from mangosteen, sesame, soy, guava and centella to boost the function of white blood cells. One of the operation BIM formulations, LIV® was found to stimulate body immunity by increasing Th17 conspicuously and Th1 significantly. Clinical studies in HIV infected volunteers confirmed that the formulation conspicuously boosted the CD4 count, reduced the side effects from antiviral drugs and markedly improved the life quality of HIV /AIDS infected patients. The formulation lowered the risk of stage 3 AIDS patients from opportunistic infections by boosting their CD4 number to over 200 cells/mm^3 in 1-2 months. Final stage AIDS patients with CD4 less than 10 cells/mm^3 were able to raise their CD4 counts to an average of 500 cells/mm^3 in 6 months. A number of patients with opportunistic infections were able to remedy their symptoms within one year and have been living normally with the viral load of less than 20 copies/mm^3. In summary, LIV® boosts CD4 count rapidly and can save lives of HIV/AIDS infected patients. A similar formulation, ThPlus®, was used to improve the life quality of cancer patients. Over the past 10 years, numerous cancer patients have recovered from their symptoms and lived normally. In conclusion, the action of the formulation is mediated by increasing Th17 and Th1 which then enhance the activity of cytotoxic T cells in eliminating HIV infected CD4 cells and cancer cells.

Biography

Pichaet Wiriyachitra has completed his PhD from University of Tasmania and Postdoctoral Studies from University of Connecticut and University of Pennsylvania. He served in the Prince of Songkla University and Chiang Mai University for 26 years and published 80 scientific papers in reputed journals both in Thai and English. He is the CEO of Asian Phytoceuticals Public Company Limited and the Principal Investigator of Operation BIM Research Team consisting of Assoc Prof Dr Ampai Panthong, Prof Dr Souwalak Phongpaichit, Assoc Prof Dr Wilawan Mahabussarakam and Assoc Prof Dr Siriwan Ong-chai.

pwapco@gmail.com

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Pietro Mastroeni
University of Cambridge, UK

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B-CELL AND ANTIBODY RESPONSES IN BACTERIAL INFECTIONS: QUALITY OR QUANTITY?

B-cells play a crucial role in bacterial infections. These cells are not just antibody producers but are also necessary to engender Th1 protective immunity. This is achieved via a variety of mechanisms including cytokine production and antigen presentation and with the involvement of both innate signalling pathways and the B-cell receptor. The crosstalk between T-cells and B-cells in turn modulates the qualitative traits of the antibody response. The isotype profile of antibodies profoundly influences the function and efficacy of the humoral response against bacteria and affects FcR usage and complement activation. Future development of vaccines and delivery systems will therefore need to consider the qualitative aspects of B-cell immunity in relation to their function.

Biography

Pietro Mastroeni has received a degree in Medicine and Surgery from the University of Messina, Italy. He moved to the University of Cambridge, UK where he completed his PhD before becoming a Research Fellow at Imperial College, University of London UK. He is currently a Reader in infection and immunity at the University of Cambridge, UK. In 2017, he was awarded the Higher Degree of Doctor of Science (ScD) St Cambridge and he is a Fellow of the Royal Society of Biology. He has published more than 120 papers in reputed journals, edited two books and serves as an Editorial Board Member for several international journals.

pm274@cam.ac.uk

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Yi Yang
Biocytogen, China

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NOVEL I-O DRUG DISCOVERIES EMPOWERED BY HUMANIZED ANIMAL MODELS

In vivo efficacy evaluation has always been a rate-limiting step during therapeutic antibody discovery due to species specificity. Using gene-editing technology, we have generated and functionally validated a series of single and double humanized mouse models for the I/O field such as B-hPD-1/hPD-L1, B-CTLA-4, B-hOX-40, B-hCD47/h-SIRPa and B-hCD3e. These models are very useful not only for single agent treatment, but also for combination therapy and bispecific antibody development.

Biography

Dr. Yi (Benny) Yang received his Ph.D. degree in immunology from University of Connecticut and completed his postdoctoral training in New York University at Dr. Dan R. Littman's group. Dr. Yang was a tenure-track Assistant Professor at Medical University of South Carolina from 2014 to 2016 and joined Biocytogen in 2016. He studied the newly discovered immune regulation of Th17 cells and intestinal microbial immunity, and published a series of paper on Nature, Science and Cell.

info@biocytogen.com