The NO-Age and NO-AD Seminar Series # 46

' Functional genetics of Obesity (tentative)'

by

Prof. Yvonne Böttcher,

at

Department of Clinical Molecular Biology, University of Oslo, Norway

'Characteristic features of immune ageing and its application on SARS-CoV-2 vaccination evaluation'

by

Prof. Guobing Cheng

at

Department of Microbiology and Immunology, Jinan University, China

14:00-15:15 (CET),Monday, 23rd May 2022

Registration ahead

https://uio.zoom.us/webinar/register/WN_vK15KckKQuyWDdnPGzEPyg

Organizers:

Evandro F. Fang (UiO), Jon Storm-Mathisen (UiO), Lene Juel Rasmussen (KU), W.Y. Chan (CUHK)

Queries: e.f.fang@medisin.uio.no

Previous recorded talks are available here: https://noad100.com/videos-previous-events/

Name: Prof. Yvonne Böttcher
Institute: Department of Clinical Molecular Biology, University of Oslo,Norway

Email: yvonne.bottcher@medisin.uio.no
Web:
www.adilabs.wordpress.com

Speaker: Prof. Yvonne Böttcher
Title: Functional genetics of obesity (tentative)

Abstract:
To be updated

Biography:
Obesity is one of the major healthcare challenges worldwide and elucidation of genetic susceptibility variants has been exploded during last years. Common variants have been confirmed for many different genomic loci via genome-wide association studies and meta-analyses. Still the effect sizes are low and represent only part of the overall heritability of polygenic obesity. Our research group is interested in (i) genetic variation underlying human eating behavior and (ii) in epigenetic mechanisms in different human adipose tissue depots. We hope to better understand the "missing heritability" of obesity.
The main team of our group is based at University of Oslo and Akershus University Hospital in Norway (UiO). Another team is working at the University of Leipzig, IFB AdiposityDiseases, Germany (Uni Leipzig).

Speaker: Prof. Guobing Chenng

Title: 'Characteristic features of immune ageing and its application on SARS-CoV-2 vaccination evaluation'

Name: Prof.. Guobing Chenng
Institute: Department of Microbiology and Immunology, Jinan University, China
Email: guobingchen@jnu.edu.cn
Web:
https://www.linkedin.com/in/guobing-chen-5a718446

Abstract:
Immunosenescence is one of the features of human aging. Elderly people, especially individuals diagnosed with frailty are more vulnerable to infectious diseases (e.g. COVID-19) and more likely to suffer from chronical disorders, due to immune ageing. Thus, it is critical to understand the biomedical indicator and molecular mechanism of immune ageing. Here, we created a comprehensive single-cell transcriptome and T cell receptor (TCR) repertoire atlas of human immune cells from cord blood, healthy young adults, healthy and frail elderly, to provide functional characterization of immune landscape of ageing and frailty, including the age-dependent accumulation of cell heterogeneity, transcriptome variability and transcription factors network, differential immune-ageing trajectories for distinct cell types, pluripotency and resilience capability of aged T cells, as well as a novel frailty-specific monocytes. Furthermore, we demonstrated that inactivated SARS-CoV-2 vaccination induced different level of impaired adaptive immune responses in elderly, which cellular immunity was much worse than antibody response. The mechanism is likely due to altered immune cell function and the insufficient antigen specific T cell clones. Our work provides comprehensive single-cell transcriptome and TCR atlas, conceptual advances, and novel clinically relevant findings important to immune ageing.

Biography:
Dr. Guobing Chen got Ph.D. degree from the Australian National University in 2011. After that, he started a five years postdoctoral fellowship and one year Research Fellow in the National Institute on Aging, NIH, USA with Dr. Nan-ping Weng, focusing on immune ageing. In Sep 2017, he established his independent laboratory at the Jinan University, China. With the support of National Natural Science Foundation of China (NSFC) and Ministry of Science and Technology of China (MOST) funded grants, he laid the groundwork for the proposed research by developing effective measures of multi-omics and antigen specific TCR repertoires analysis during aging and frail elderly, and by established strong ties between TCR diversity regeneration and T cell immunosenescence, especially in the SARS-CoV-2 vaccination. In addition, he successfully administered the projects collaborated with other researchers, to study the immunological factors relevant to neurodegenerative diseases