



Biologics Seminar Series

January-June 2018

Where: Department of Pharmacy, Faculty of Health and Medical Sciences, Universitetsparken 2, 2100 Copenhagen

Program

- **Wednesday 31st January 2018 at 9 am, Benzon Auditorium**
Dr. Yuki Mori, PhD, Associate Professor, Division of Glial Disease and Therapeutics, Center for Translational Neuromedicine, University of Copenhagen, Denmark
"In-vivo single cellular tracking with pre-clinical MRI scanner"
- **Wednesday 28th February 2018 at 9 am, Auditorium A4**
tba
- **Wednesday 4th April 2018 at 9 am, Benzon Auditorium**
tba
- **Wednesday 9th May 2018 at 9 am, Auditorium A4**
tba
- **Wednesday 13th June 2018 at 9 am, Benzon Auditorium**
Prof. William Winston Agace, PhD, Division of Immunology & Vaccinology - Mucosal Immunology, National Veterinary Institute, Technical University of Denmark (DTU), Lyngby, Denmark
"Dendritic cells in the regulation of intestinal immune response"

The seminars will last for 45 min + 15 min questions and are free of charge. Please contact Camilla Foged (camilla.foged@sund.ku.dk or +45 21633464) for further information.

Abstracts

Wednesday 31st January 2018 at 9 am, Benzon Auditorium

Dr. Yuki Mori, PhD, Associate Professor, Division of Glial Disease and Therapeutics, Center for Translational Neuromedicine, University of Copenhagen, Denmark

***In-vivo* single cellular tracking with pre-clinical MRI scanner**

Abstract:

The remarkable advances in live imaging technologies have enabled the visualization of specific cells over extensive periods of time *in vivo*, as well as *ex vivo*. Live cellular tracking is mostly achieved by optical microscopy combined with the use of genetically encoded fluorescent proteins. However, most *in vivo* studies using optical imaging, especially in the animal brain, are limited to the first few micrometers depth, which prevents us from understanding the inner workings of immune cells in the living animal. Ultra High Field Magnetic Resonance Imaging (UHF-MRI) offers advantages over other modalities in its ability to provide three-dimensional (3D) images at a reasonably high spatial resolution, as well as longitudinal information without any invasive surgical intervention. This advantage has led to a growing interest in MRI as a technique to detect and track live cells in the body, particularly in the vulnerable brain tissue. Here, I would like to introduce you the several applications of UHF-MRI for biological researches, and especially I would like to show you the novel application for tracking individual monocytes/macrophages in the living mouse brain with high spatial resolution 3D and time-resolved (four- dimensional, 4D) imaging.



Dr. Mori joined the University of Copenhagen in August 2017, as the head of NMR Core Facility. He started the carrier with pre-clinical MRI scanner at the Meiji University of Integrative Medicine, Japan in 1998. His postdoctoral studies were performed at the Department of Neurosurgery, at Iwate Medical University and Immunology Frontier Research Center (IFReC), at Osaka University, Japan. He has gained experience in operation and trouble-shooting of 11.7T high field preclinical MRI scanner and provided guidance on MRI for various collaborators from neurology and immunology research groups. He has developed a wide range of MRI applications such as conventional MRI/MRS, cellular tracking using MRI, Diffusion/Perfusion MRI, Manganese-enhanced MRI, quantify dynamic contrast enhanced (DCE) imaging with paramagnetic contrast agents, and so on. His main research interest is the development novel non-invasive visualization techniques to unveil the cross-talk among neural and immune systems using by MRI technologies. His latest works demonstrated the immunological response in the living mouse with 11.7T ultra-high field MRI scanner (Mori et al, Sci Rep 2014, Int Immunol 2014,). His work has resulted in several awards including the President Award from Osaka University and Bayer young investigator award from the Japanese Society for Magnetic Resonance in Medicine.

Wednesday 13th June 2018 at 9 am, Benzon Auditorium

Prof. William Winston Agace, PhD, Division of Immunology & Vaccinology - Mucosal Immunology, National Veterinary Institute, Technical University of Denmark (DTU), Lyngby, Denmark

Dendritic cells in the regulation of intestinal immune response

Abstract:

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Dr. Agace received a B.Sc. (Hons) in Microbiology from Bristol University, UK, in 1989 and a PhD in Mucosal Immunology from Lund University, Sweden in 1996. His postdoctoral studies were performed at the Department of Rheumatology, Immunology and Allergy, at the Brigham and Women's Hospital and Harvard Medical School. Dr. Agace established his independent group at the Immunology Section at Lund University in 1999, a section he headed from 2006-2014. Major contribution to the field of mucosal immunology include the identification of CCR9 as a T cell homing receptor for the small intestine, identification of CD103+ dendritic cells (DCs) and demonstration of their key role in initiation of the mucosal adaptive immune response. More recently his group has demonstrated that the intestine contains multiple DC subsets each playing key non-redundant roles in intestinal T cell homeostasis (Persson et al *Immunity* 2013, Luda *immunity* 2016). His current interests include understanding the role of environment in regulating immune/stromal cell functionality and specialization within the mucosa. His work has resulted in several awards including the Anders Jahre Young Researcher Award in Biomedicine from the University of Oslo and the Göran Gustafsson Prize in Medicine from the Swedish Royal Academy of Sciences. Dr Agace is one of three Editor-in-chiefs for the journal *Mucosal Immunology (NPG)* and currently serves as one of two European councilors on the board of the Society of Mucosal Immunology (SMI). He currently divides his time running research groups at Lund University, Sweden and the Technical University of Denmark.