Institute of Molecular and Cell Biology
A*STAR

SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by Prof. Walter Hunziker:

Date: 10 September 2018, Monday
Time: 11:00AM – 12:00PM
Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Dr. Marc Kvansakul, Department of Biochemistry & Genetics, La Trobe University, Melbourne, Australia
Title: Structural Insight into Defensin-mediated membrane attack

Cationic antimicrobial peptides (CAPs) are innate defense molecules produced by essentially all living species and represent a rich source of novel therapeutic molecules for the treatment of human diseases including cancer. Although several CAPs (mainly from amphibians and vertebrates) have been shown to exhibit direct toxicity against tumor cells, the underlying molecular mechanisms are not well understood. We are interested in the functional and structural basis of the anti-microbial activity of CAPs of different species, and our attention has centered on defensins, a family of CAPs from both plants and mammals. We uncovered phospholipids as an unexpected family of defensin ligands that are critical for the anti-microbial activity of defensins, and identified a novel mechanism of action underlying defensin mediated membrane attack.

Biography:
After completing an undergraduate degree in Biochemistry (1st class) at Imperial College London, Marc was awarded a Wellcome Trust Prize Studentship to pursue a PhD with Prof. Erhard Hohenester at Imperial College London, investigating collagen-binding proteins in the extracellular matrix. In 2004 he took up a Leukemia & Lymphoma Society of America fellowship to work with Prof. Peter Colman at the Walter and Eliza Hall Institute, where he developed a passion for host-pathogen interactions. His post-doctoral work centered on the molecular basis of virus mediated subversion of host cell death. In 2010, Marc was awarded an NHMRC Career Development Award to establish the inaugural structural biology laboratory at La Trobe University. Now an ARC Future Fellow, his work has expanded into the role of innate immunity molecules in anti-microbial defence. In addition to a passion for research he is also committed to communicating science to the public, and his efforts in both areas have been recognized by the Victorian Tall Poppy in Science award and the Sandy Mathison Medal from the Society of Crystallographers from Australia and New Zealand.