



Joint IMB - SIgN Seminar
- All Are Welcome -



Speaker: Prof Wolfgang Weninger
Assistant Director
Professor and Head
Immune Imaging Program
Centenary Institute for Cancer Medicine and
Cell Biology Locked Bag

Title: “Mechanisms of immune cell recruitment into sites of inflammation.”

Date : 16 Dec 2014 (Tuesday)

Time : 4.00pm – 5.00pm

Venue: Breakthrough Theatre, Matrix Level 4 , Biopolis

Host : Dr Ng Lai Guan

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Abstract of the Seminar:

Leukocyte migration from the bloodstream into tissues is mediated by the multi-step adhesion cascade. The initial steps of this cascade, including rolling and firm adhesion, have been studied in great detail. Less is known about the dynamics and mechanisms of the actual leukocyte transmigration step in vivo. The Weninger laboratory has recently discovered a novel role for cells in the perivascular space, in particular perivascular macrophages (PVM), which guide neutrophils into the interstitial space. They have further shown that PVM can be targeted by bacterial toxins resulting in delayed neutrophil diapedesis. These data reveal the novel concept of the "perivascular extravasation unit" stipulating that extravascular cells impact on the behaviour of cells in the bloodstream. A second line of investigation has found that the transmigration step of neutrophils and T cells is fundamentally different. Thus, while neutrophils do not depend on enzymatic modification of the vascular basement membrane during extravasation, cytotoxic T cells require the protease granzyme B. Basement membrane remodeling during diapedesis represents a novel paradigm in the homing cascade of leukocytes. Results from these studies will be presented.

About the Speaker:

Professor Weninger received his training in clinical dermatology at the Department of Dermatology, University of Vienna Medical School, Vienna, Austria (1992-1999). He then spent four years at Harvard Medical School, US, where he investigated the mechanisms of immune cell migration in vivo. Between 2003-2007, Professor Weninger was a Faculty member at the Wistar Institute and the Department of Dermatology, University of Pennsylvania, US. In 2007, he was appointed Chair of the Department of Dermatology, Sydney Medical School, and Head of the Immune Imaging Program at the Centenary Institute. Professor Weninger's research focuses on understanding the molecular basis of immune cell migration as well as immune cell interactions with pathogens and cancer cells. His group makes use of advanced imaging technology, primarily intravital two-photon microscopy.