Watching the Great Myeloid Cell Migration

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Abstract
The immune system consists of an extensive network of immune cells distributed among various body compartments, including lymphoid and non-lymphoid organs. A major characteristic of leukocytes is that they rely on their migratory behavior to execute their effector functions in a temporal and anatomical defined manner, and to return to a state of homeostasis after the response. To attain a comprehensive understanding of the cellular and molecular mechanisms of leukocyte function, ideally, the trafficking/migratory activities of leukocytes should be investigated within their native microenvironment in a dynamic manner. The primary goal of our laboratory is to understand how the local micromilieu impacts on the dynamic activities and function of myeloid cells. Specially, we aim to visualize the behavior of neutrophils and monocytes in a compartmentalized manner, i.e. by deciphering their interactive behavior in the bone marrow (BM), within the circulatory system and peripheral tissue/organ. This talk will provide a broad overview of the current projects in our laboratory.

About the Speaker
Dr. Ng completed his Bachelor of Medical Science (Honours) degree from University of New South Wales, Australia in 2000. He was then awarded an International Postgraduate Research Scholarship to conduct his PhD work at the Garvan Institute of Medical Research in Sydney, Australia. After completing his PhD in 2004, he joined Institute of Molecular and Cell Biology in Singapore for his postdoctoral training under the supervision of Professor Lam Kong Peng. In 2006, Dr. Ng joined Professor Wolfgang Weninger’s laboratory at the Wistar Institute in Philadelphia USA. Following his postdoctoral training, Dr. Ng joined Singapore Immunology Network (SIgN) to establish his own laboratory in 2009. He is also an adjunct Assistant Professor at the National University of Singapore and Nanyang Technological University. Dr. Ng has also been appointed as an adjunct Scientist at KK Women’s and Children’s Hospital and adjunct Associate Professor at Sydney Medical School, University of Sydney, Australia.

The primary research focus of his group is to study how immune cells exert their function in the context of intact organs by intravital multiphoton microscopy. Using a combination of functional and in vivo imaging studies, his group aims to determine the sequence of cellular and molecular events involved in the regulation of immune cell homeostasis. Dr. Ng’s laboratory has established several intravital imaging approaches for direct visualization of immune cell behaviour in vivo. Dr. Ng’s contributions to the field of immunology research are best exemplified by his multiple publications in leading biomedical research journals. He is also a review editor of Frontiers in Immunotherapies and Vaccines and an academic editor for PloS One. Dr. Ng also recently joined the editorial board of Cellular Immunology and Journal of Dermatological Research.