

Department of Microbiology and Immunology

Research Seminar: Visiting speaker from the Bonn and Melbourne Research Graduate School (Bo&MeRanG)

CCL17 as a central mediator of inflammation and neuro-immune interactions

Prof Irmgard Förster

Immunology and Environment, Life & Medical Sciences (LIMES) Institute, University of Bonn, Germany and partner of the Bonn and Melbourne Research Graduate School (Bo&MeRanG)

Chemokines are important signaling molecules in the immune and nervous system. Within the immune system, the chemokine CCL17, a ligand of the chemokine receptor CCR4, is predominantly expressed by dendritic cells in barrier tissues, such as the skin and intestinal mucosa. It is known that CCL17 plays an important role in cell migration and in the induction of several inflammatory and allergic diseases, including atopic dermatitis, contact hypersensitivity, and arthritis. For prevention of CCL17-mediated inflammation we recently developed RNA-based aptamers which efficiently inhibit contact hypersensitivity responses. We also showed that CCL17 is expressed in a subset of hippocampal CA1 neurons in the murine brain. Constitutive expression of CCL17 in the hippocampus is strongly enhanced upon peripheral challenge with lipopolysaccharide in a TNF-dependent manner. Both, alterations in the morphology of microglia and in synaptic transmission at CA3-CA1 Schaffer collaterals were detected in CCL17-deficient animals. In addition, we generated a mouse model for inducible depletion of CCL17-expressing cells using CCL17-Diphtheria Toxin Receptor (DTR)-Knockin mice.

Irmgard Förster is a Professor of Immunology and Environment at the Life-and Medical Sciences (LIMES) Institute of the University of Bonn, Germany. After having received her PhD from the University of Cologne, she moved as a postdoctoral fellow to the University of California at San Francisco, USA, studying T cell tolerance. Back in Germany she continued to work at the Institute for Genetics, University of Cologne, and started to investigate the function of myeloid cells using conditional gene targeting techniques. At this time, her group developed the LysM-Cre mouse strain, which is widely used for myeloid cell-specific gene targeting. In 1998, she was appointed as an Associate Professor of Mucosal Immunity at the Technical University of Munich and in 2005 moved to the Leibniz Research Institute of Environmental Medicine, Düsseldorf, Germany, as head of Molecular Immunology. In 2012, she was recruited to the University of Bonn to participate in the Cluster of Excellence "ImmunoSensation". Irmgard Förster is interested in cell migration and immune regulation in barrier organs, focusing on dendritic cells and macrophages. A major topic of her research is the functional characterization of the chemokine CCL17 in the context of allergic and inflammatory diseases, as well as neuro-immune functions. Another part of her research addresses the regulation of aryl hydrocarbon receptor (AhR) activity in response to environmental stimuli in the skin and gut.

Wednesday, 2nd of May 2018, 12.30pm Auditorium

The Peter Doherty Institute for Infection and Immunity
792 Elizabeth St, Melbourne

Everyone welcome. For seminar attendees wishing to have further discussions with the speaker after the seminar, light refreshments will be provided in the Doherty Institute Tearoom on Level 5.

