Department of Biochemistry and Molecular Biology

PhD Oration

Wednesday the 28th of March
12-1pm
Bio21 Institute Auditorium
30 Flemington Road, Parkville

Steffi Cheung
Parker Laboratory,
Department of Biochemistry and Molecular Biology, University of Melbourne and St Vincent's Institute for Medical Research.

Understanding biological signalling in the βc cytokine receptor family

The beta-common (βc) cytokine family, namely granulocyte-macrophage colony stimulating factor, interleukin (IL)-3 and IL-5, mainly produced by activated T-cells, regulate cell survival, proliferation, differentiation and migration. They have been associated with modulating physiological haematopoiesis and play functional roles in the nervous system. Aberrant signalling from the βc cytokines has been associated with numerous diseases such as leukaemia, asthma and rheumatoid arthritis. Thus, understanding the mechanism of signalling of the βc cytokines would be very useful in developing therapies that are able to modulate their effects under pathological conditions.

I have investigated the mechanism of assembly of the βc dodecameric signalling complex using biophysical methods and X-ray crystallography. I have also used antibodies and small molecules that disrupt the formation of the signalling complex, as tools to understand the downstream signalling activated by the βc cytokines. Furthermore, I have characterised putative co-receptors that have been reported to bind to the βc receptor. All together, my studies have provided important fundamental knowledge in understanding the biology of the βc cytokine family which will provide a rational basis for the discovery of novel modulators targeting βc signalling.

ALL WELCOME. Please join us for Pizza to celebrate this PhD Oration!
Further information: Matthew Dixon (matthew.dixon@unimelb.edu.au)