Incidence of asthma and related allergic manifestations is increasing in the Western world. The symptoms associated with these conditions are invariably debilitating the development of improved therapeutic strategies to combat these afflictions is a healthcare priority. One strategy that offers the prospect of a preventative rather than ameliorative intervention is to administer molecules that can block the interaction of human Immunoglobulin E (IgE) with its high affinity receptor FceRI; a protein-protein interaction (PPI) that is central to the allergic signal transduction cascade.

Proof of principle that this strategy can be effective, and does not suffer from unacceptable side-effects, comes from the successful clinical use of the monoclonal antibody Omalizumab (Xolair®) which is indicated for severe persistent asthma and operates by sequestering IgE in the blood and preventing binding to FceRI. However, its high cost and non-oral mode of delivery has fuelled interest in the development of alternative antagonists of this PPI. We have been investigating approaches to disrupting this PPI based on both tolan-constrained peptides based on a hot spot epitope of IgE and based on a natural product antagonist, aspercyclide A.

References:

CBC SEMINAR ANNOUNCEMENT

Professor Alan Spivey
Imperial College London

Synthesis directed at the disruption of a protein-protein interaction in asthma

Date: 19th March 2013 (Tuesday)
Time: 3:00pm – 4:00pm
Venue: NTU SPMS CBC Building Level 2, Conference Room
Host: Assoc Professor Roderick Bates