SIgN Immunology Seminar



Dr Henry Maun

Department of Early Discovery Biochemistry of Genentech, USA

Understanding the structure and function of therapeutic targets for drug development: examples from cMet-HGF, Hedgehog, VEGF and Wnt signaling

Host
Dr Zhong Pingyu
Singapore Immunology Network, A*Star

Date
Friday
9 October 2015

Time
3pm – 4pm

Venue
Exploration Matrix Building
Level 4
Biopolis

My talk will discuss how more detailed understanding of receptor-ligand interaction and their mechanism of action can lead to better therapeutic antibody development and open new and unexpected avenues for inhibitor design. I will present what we have learnt from similarities in binding modes between the inhibitory receptor HHIP and the Hedgehog morphogen neutralizing antibody 5E1 with respect to Hedgehog signaling and how these binding sites correlate with the disease Brachydactyly type A1. Second, I will present the mechanism of action of the engineered monovalent antibody onartuzumab based on structural studies of a receptor-ligand-Fab fragment complex and how this antibody inhibits cMet-HGF driven cancer growth in vivo. Lastly, I will discuss the engineering of a cysteine protease inhibitor as an alternative protein scaffold for generating target specific inhibitors that block VEGF and Wnt signaling. Such engineered binders can serve as tools for target validation, assay development, compound or antibody screening or imaging.

Dr. Henry Maun is a Principal Scientific Researcher in the department of Early Discovery Biochemistry of Genentech Inc., San Francisco, USA. He received his PhD from the Albert-Ludwigs-University of Freiburg in Germany. His current research focuses on protein-protein interactions in cell signaling events as well as engineering novel protein binders from peptides and alternative protein scaffolds.