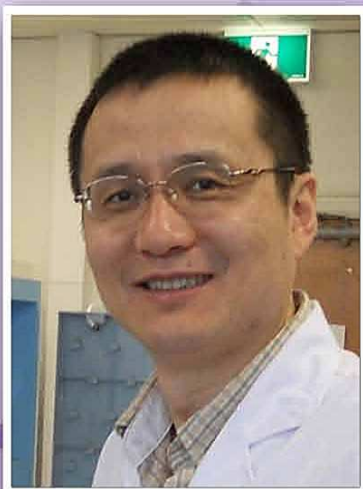


IMCB Invited Speaker



Speaker : Prof. Hongyuan Robert Yang
*Professor and ARC Future Fellow,
School of Biotechnology and Biomolecular Sciences,
The University of New South Wales, Sydney, Australia*

Date : 8 January 2014, Wednesday

Time : 11:00AM - 12:00PM

Venue : IMCB Seminar Room 3-46, Level 3, Proteos, Biopolis

Host : Prof. Wanjin Hong

Seminar :

Lipid storage and trafficking in human metabolic and neurodegenerative disorders

Obesity is characterized by accumulation of adipocytes loaded with lipid droplets (LDs). We have recently identified a number of yeast gene products that regulate the size and number of LDs. Notably, deletion of a previously uncharacterized gene, *FLD1*, results in the formation of "super-sized" LDs. Interestingly, null mutations of seipin (the human orthologue of *Fld1p*), are associated with human Berardinelli-Seip Congenital Lipodystrophy 2 (BSCL2). We use mouse and fly models to confirm an essential role of seipin in adipogenesis. Therefore, seipin regulates both systemic (adipocyte differentiation) and cellular (LD formation) lipid storage. Our recent results suggest that seipin functions in the metabolism of phospholipids, and that seipin deficiency causes accumulation of certain lipid species, such as phosphatidic acid. These accumulated lipids may interfere with PPARgamma function during adipocyte differentiation in preadipocytes, and may also cause morphological changes of LDs in other cell types.

Sterols as essential components of eukaryotic membranes must be sorted precisely and transported efficiently. Abnormal subcellular distribution of cholesterol is associated with heart and neurodegenerative diseases including Alzheimer's disease and Niemann Pick C disease, which is characterized by cholesterol accumulation in endosomes and lysosomes. The intracellular trafficking of cholesterol remains a challenging subject in cell biology. We have recently identified novel cytosolic proteins essential for cholesterol efflux from late endosomes and lysosomes, including ORP5, Hrs/Vps27 and Vps4.

About the Speaker :

Professor Hongyuan Robert Yang obtained his Bachelor of Medicine degree from Peking University (Beijing, China) in 1993; and his Ph.D. from Columbia University (New York, USA) in 1998. Soon after, he started his own laboratory as a lecturer at the Department of Biochemistry, National University of Singapore where he was promoted to associate professor with tenure. He joined the University of New South Wales (Sydney, Australia) as a senior lecturer in 2007, and became a professor at the beginning of 2013. His work focuses on lipid storage and trafficking in eukaryotic cells, and extends to human metabolic and neurodegenerative diseases. He has published over 60 peer-reviewed articles and book chapters. He was awarded an inaugural Future Fellowship by the Australian Research Council in 2009, and very recently a Senior Research Fellowship by the National Health and Medical Research Council.