Institute of Medical Biology
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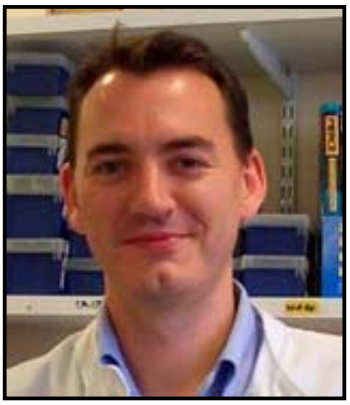
Seminar Announcement
- All Are Welcome -



Speaker: **Dr Justin Rochford**
University of Cambridge

Title : ***Determining the molecular roles of human lipodystrophy proteins in adipocyte development and function***

Date : **23 March (Friday)**

Time : **11.00am – 12.00pm**

Venue : **Breakthrough Theatrette, Matrix Level 4**

Host : **Dr Colin Stewart**
(Tel: 64070156, e-mail: colin.stewart@imb.a-star.edu.sg)

Abstract:
Appropriately functioning adipose tissue is essential for human health. This is most dramatically illustrated by syndromes of severe congenital generalized lipodystrophy (CGL), in which the inability to develop adipose tissue typically leads to severe insulin resistance, dyslipidaemia and cardiovascular disease. In morbid obesity, despite abundant adipose tissue, adipocytes are hypertrophic, metabolically inflexible and unable to appropriately store circulating nutrients. This results in a state of relative adipose insufficiency. Thus, paradoxically, the metabolic consequences of obesity and lipodystrophy overlap significantly, reflecting adipocyte dysfunction in both cases. As causes of CGL identified to date are all single homozygous gene disruptions these offer precisely defined models to investigate the mechanisms linking altered adipose function to metabolic health.
We have particularly focussed on the gene *BSCL2*, encoding the protein seipin, whose disruption causes the most severe lipodystrophy described. Despite this we know little about the molecular function of seipin. We have now uncovered distinct functions for seipin in stem cell commitment, early adipogenesis and in mature adipocytes. Overall, we propose that a detailed understanding of the molecular roles of seipin and other lipodystrophy proteins will reveal new regulators of adipocyte development and function. This will suggest novel therapeutic targets to improve metabolic health in disorders of altered adipose function including common obesity.

About the Speaker:
Justin Rochford received his PhD from the University of Newcastle upon Tyne, UK, working with Steve Yeaman. His initial work focussed on understanding insulin regulated signalling pathways in skeletal muscle cells and their dysfunction in insulin resistant states. He obtained an INSERM Poste Vert Fellowship, to work with Emmanuel Van Obberghen at INSERM Unit 145, Nice, France, continuing his studies of hormonally regulated intracellular signalling networks. He then moved to the University of Cambridge, UK to work with Steve O'Rahilly, to investigating altered intracellular signalling in patients with severe insulin resistance. He was subsequently awarded a British Heart Foundation Intermediate Fellowship to develop an independent research program investigating the molecular basis of adipocyte development and function. His work particularly focuses on defining the molecular functions of proteins whose disruption causes severe lipodystrophy in humans to gain insights into the mechanisms regulating human adipocyte differentiation. He currently holds a New Investigator Research Grant from the Medical Research Council (MRC) and is an Investigator at the University of Cambridge Metabolic Research Laboratories and MRC Centre for Obesity and Related Metabolic Diseases.