Institute of Medical Biology
A*STAR

Seminar Announcement

- All Are Welcome -



Speaker : **Dr Richard Siow**

Vice-Dean International
Faculty of Life Sciences & Medicine
Cardiovascular Division
British Heart Foundation Centre of Research Excellence
King's College London

Title : ***"Redox signalling in vascular ageing and physiological normoxia"***

Date : 15 May 2017 (Monday)
Time : 11:00am – 12:00pm
Venue : Breakthrough Theatre, Matrix Level 4
Host : Prof Colin Stewart

Abstract:

Cells have evolved endogenous defense mechanisms to combat oxidative stress, with the redox sensitive transcription factor Nrf2 playing a critical role in the induction of phase II and antioxidant defense enzymes. As molecular mechanisms regulating Nrf2 signaling have largely been studied *in vitro* in cells exposed to atmospheric O2, we investigated Nrf2 gene targets in human vascular endothelial cells following long-term culture under physiological (5%) O_2 levels encountered *in vivo*. Nrf2 nuclear translocation and induction of GSH-related genes were insensitive to alterations in ambient O_2 levels. Induction of the Nrf2 target genes HO-1 and NQO1 was diminished in cells adapted to 5% O_2 due to upregulation of the Nrf2 repressor Bach1. GSH-related genes may thus act as transducers of Nrf2 regulated cytoprotection under physiological normoxia. Our study of redox signaling in cells adapted long-term to physiological normoxia provides unique insights for translation to study cardiovascular ageing and regenerative therapies.

About the Speaker:

Dr Richard Siow graduated from King's College, University of London (1993) with a BSc in Nutrition and AKC. He subsequently obtained a PhD in Physiology (1996) at the Centre for Cardiovascular Biology and Medicine, King's College London. Following postdoctoral positions at King's College and the Division of Cardiovascular Medicine, Addenbrooke's Hospital, University of Cambridge, he was appointed in 2001 as a Lecturer in Physiology, King's College School of Biomedical & Health Sciences.

He is currently a Senior Lecturer in the Cardiovascular Division, British Heart Foundation Centre of Research Excellence. Richard is the Co-ordinator and Committee Chair of Ageing Research at King's (ARK), a cross-Faculty consortium of researchers taking a multidisciplinary approach to better understand the mechanisms of ageing and related diseases to improve health-span, clinical translation and the social impact of ageing.

Richard has recently championed the Partnership between King's and Unilever through his collaborations with their global R&D Centres. He is actively engaged in King's international partnership activity including academic institutions and industry in Germany, USA, India, China and Singapore as well as being appointed interim Vice-Dean International in March 2017. Richard also established the King's India Summer Session at Unilever Bangalore, a unique international academic-industry educational initiative.

He is also a committee member of the British Microcirculation Society and an elected Fellow of the Royal Society of Biology. Other memberships include the British Society for Cardiovascular Research, Physiological Society and Society for Free Radical Research. In addition, he is an adviser to the Parliamentary Office of Science and Technology and Westminster Forum on Diet and Health.