IMCB Invited Speaker

Speaker : **Ms. Christine Cheung**
Ph.D. in Cardiovascular and Stem Cell Biology, University of Cambridge, UK

Date : 10 July 2012 (Tuesday)

Time : 10:00AM - 11:00AM

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

Host : Prof. Uttam Surana

Seminar :

What does smooth muscle development tell us about vascular disease susceptibility?

Vascular diseases tend to afflict specific regions of blood vessels even though most identified risk factors are systemic. Vascular smooth muscle cells (VSMCs), which make up the blood vessel walls, were originally thought to arise during development from a single mesenchymal source. However, recent fate mapping studies have revealed that VSMCs at different regions of the vasculature are derived from distinct embryonic lineages. These findings could be relevant to the anatomic localisation of vascular diseases since VSMCs from different origins may respond variably to systemic disease mediators. Nonetheless, the difficulty of obtaining VSMC progenitors from early embryos in sufficient quantities has limited research into how VSMC origins contribute to disease susceptibility. Therefore, my work aims to establish a chemically defined method to direct differentiation of human pluripotent stem cells into embryonic origin-specific VSMC subtypes. This highly efficient method generates robust populations of functionally distinct VSMC subtypes. These human VSMC subtypes would greatly facilitate studies of VSMC origin-dependent disease mechanisms. Perspectives on how this novel human VSMC system could be useful in regenerative medicine and disease modelling will be highlighted.

About the Speaker :

Christine Cheung graduated from Imperial College London in 2008 with a BEng degree in Biomedical Engineering. Currently she is completing a PhD degree in Cardiovascular and Stem Cell Biology at the University of Cambridge. In her doctorate research, she established an efficient method to derive vascular smooth muscle subtypes from human pluripotent stem cells for studying arterial diseases. She is interested in elucidating the impact of embryonic origins on vascular disease susceptibilities. Christine was awarded the NSS-BS (2005) and NSS-PhD (2009) scholarships from A*STAR. In 2011, she was an invited speaker at the Cambridge Developmental Biology Seminar hosted by Sir John Gurdon. Besides receiving the Best Poster Award at the Stem Cell Society Singapore Symposium in 2011, she was a selected speaker at the European Society of Cardiology Conference in 2012.

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