



Institute of
Molecular and
Cell Biology

SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by Dr. Edward Manser:

Date: 22 December 2014, Monday

Time: 11:00AM – 12:00PM

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

Speaker: Dr. Hwee Goon Tay, SUNY Upstate Medical University, USA

Title: Dynamic Regulation of YAP During Early Cardiac Development

Early cardiac morphogenesis involves migration of bilateral epithelial sheets of cardiomyocytes from lateral plate mesoderm to the midline to form a heart cone and subsequently the heart tube and chambers. YAP (Yes associated protein) is a downstream effector of the Hippo pathway which is known to regulate cell proliferation and organ size. We have found a dynamic distribution of YAP during early cardiac development. YAP localization is predominately nuclear in cardiomyocytes of the heart tube and chambers, but is excluded from the nucleus in cardiomyocytes during the heart cone stage. This suggests dynamic regulation of YAP in cardiomyocytes. Absence of the polarity protein Pard6gb in mutant embryos disrupts the assembly of heart tube. Strikingly, YAP becomes predominately nuclear localized in heart cone cardiomyocytes of Pard6 mutants, suggesting Pard6 is required to maintain YAP outside of nucleus potentially to inhibit cell proliferation. However, it is unclear if the localization of YAP outside of nucleus by Pard6gb is dependent on the Hippo pathway. Live time-lapse imaging analysis shows polarized cell movement, migration rate and cell shapes of cardiomyocytes are perturbed in these mutants, suggesting defective heart tube assembly could also be due to aberrant cell behaviors mis-regulated in the absence of Pard6gb that results in the mis-localization of YAP. This study uncovers a novel role for Pard6gb to regulate YAP during early cardiac development.

Biography:

Hwee Goon Tay joined Dr Jeffrey Amack's group as a Postdoctoral Associate in State University of New York (SUNY) Upstate Medical University in Aug 2010. Her research interest involves investigating the orchestrated functions of cytoskeletal-associated proteins during ciliated epithelia development that includes early cardiac morphogenesis. Her long term goal is to understand the mechanisms relevant to cilia related diseases called ciliopathies and also congenital heart defects. She received PhD from NUS Graduate School (NGS) in National University of Singapore (Aug 2005 to Aug 2009). Her thesis advisor was Dr Edward Manser from the Institute of Medical Biology (IMB) – A*STAR. She was involved in studying the in-vivo functions and mechanisms of Rho GTPases signaling and PAK during early embryonic development. She obtained her Bachelor of Science with Honors from University of New South Wales, Sydney, Australia in 2003. She has published and co-published in international peer-reviewed scientific Journals.

ALL ARE WELCOME (No registration required)