



CDB SEMINAR

Patrick P. L. Tam

Embryology Unit, Children's Medical Research Institute and Faculty of Medicine
University of Sydney (Australia)

Wednesday, January 18
16:00~17:00
C1F CDB Auditorium

Genetic activity influencing lineage allocation and cell movement during mouse gastrulation

The major outcomes of gastrulation are the allocation of tissue progenitors to the germ layers and the appropriate localization of the precursor tissues of body parts and organ primordia in the basic body plan. The *Lim1/Lhx1* transcription factor plays a critical role in the morphogenetic movement of the axial and paraxial mesoderm during gastrulation, whereas the loss of *Mixl1* may affect the allocation of the mesendodermal progenitor to the endodermal lineage. The impact on the formation and movement of the endoderm may underpin the morphogenetic defects of the mutant embryos. Alterations of migratory behaviour are likely to be due to changes in the cell-cell interaction which is mediated by cell surface molecules and the propulsive and attractive activity between the cells and their tissue environment. Analysis of the effect of altered function of two interferon-induced transmembrane (IFITM) proteins highlights the role of homotypic cell-cell interaction in navigating the movement of primordial germ cells during mouse gastrulation.

Patrick Tam is a Senior Principal Research Fellow of the National Health and Medical Research Council of Australia and the Faculty of Medicine, University of Sydney and the Head of Embryology Unit at the Children's Medical Research Institute. His research focuses on the elucidation of the cellular and molecular mechanisms of the tissue patterning and the development of the craniofacial structures in the mouse embryo. Specifically, he examines the morphogenetic role of the mouse gastrula organizer in patterning the neural primordium during early embryogenesis. He pioneers the application of micromanipulation and embryo culture for analysing tissue potency and lineage specification in mutant embryos generated by gene targeting.

Host: Shinichi Aizawa

Vertebrate Body Plan, CDB

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