



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY
Division of Life Science

LIFS Seminar Series

Developmental spatial transcriptome reveals lineage segregation of three germ layers in mouse gastrula

by

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Abstract:

The blueprint of embryonic development is first visualized in the context of regionalization of cell fates of germ layer tissues in the post-implantation mouse embryo. Knowledge of the genetic and signaling activities that underpin gastrulation, lineage specification and tissue patterning is instrumental for stem cell-based translational study, and has been gleaned from embryological experimentation and phenotypic analysis of loss- and gain-of-function genetic models. However, a comprehensive genome-wide molecular annotation of the mechanism of gastrulation has yet to be undertaken. Here, we reported the findings of a systematic transcriptome study of cell populations at defined positions in the epiblast, ectoderm, mesoderm and endoderm of the pre-gastrulation and gastrulation stage embryos. This developmental and spatial transcriptome has defined the molecular genealogy of cells in the germ layers in real time and real space resolution. The transcriptome further identifies the molecular determinants such as the transcriptional factors and epigenetic entities, and the activity of signaling pathway and the transcriptional networks that drive the lineage commitment of the pluripotent epiblast cells and the germ layer precursors.

Date : **18 May 2018 (Friday)**
Time : **4:00 p.m.**
Venue : **Lecture Theatre D
The Hong Kong University of Science
& Technology
Clear Water Bay, Kowloon**

(Host faculty: Prof. Zilong Wen)

All are Welcome!!