

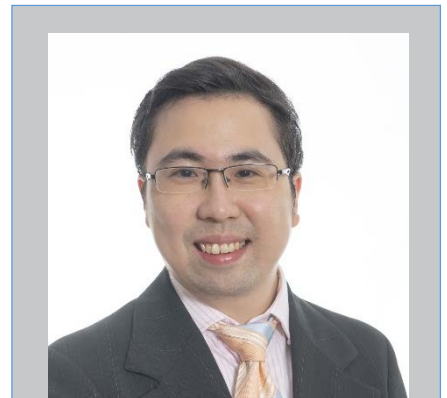


Seminar Announcement

Epigenetic Reprogramming towards Totipotency

Date: 23 September 2019
Time: 2.30 p.m.
Venue: Classroom 4, SBS
Hosted By: A/P Koh Cheng Gee

The property of totipotency is widely considered to be exclusive to the zygote and early cleavage-stage embryos in vivo. However, recent studies in mouse embryonic stem cells (mESCs) showed that a rare subpopulation of cells can transit into an early-embryonic-like state characterized by the expression of 2-cell (2C) stage restricted transcripts. The discovery of 2C-like mESCs has now opened up a window of opportunity to investigate the molecular basis of totipotency, and accordingly, expanded fate potential. In this talk, I will detail our strategy to discover regulators of the 2C/totipotent-like state. This endeavor has led us to successfully identify novel factors and processes that govern the transition into this developmentally antecedent cell state. We further found that specific epigenetic reprogramming changes in vivo are recapitulated in these totipotent-like cells. Our findings thus extend contemporary knowledge of how totipotency may be regulated, with wider implications in regenerative medicine.



Speaker:

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