City University of Hong Kong
Department of Biomedical Sciences
presents a seminar

"ZFP57 LINKS MATERNAL EFFECT, GENOMIC IMPRINTING AND NOTCH SIGNALING"

by

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Date: 29 March 2016
Time: 10.30am to 12.00noon
Venue: Meeting room 2-130, 1/F, Block 2, To Yuen Building, CityU

Abstract
Genomic imprinting is absolutely essential for mammalian development. Dysregulation of genomic imprinting is associated with a variety of human diseases including cancer, diabetes, cardiovascular diseases and neurological disorders. My lab discovered ZFP57 as a master regulator of genomic imprinting. ZFP57 maintains DNA methylation imprint at a large number of imprinted regions in mouse embryos and pluripotent embryonic stem (ES) cells. We found Zfp57 is a maternal-zygotic effect gene, the first one identified in mammals. Loss of just the zygotic function of Zfp57 causes partial neonatal lethality, whereas elimination of both maternal and zygotic functions of Zfp57 results in highly penetrant embryonic lethality around midgestation. Our recent results have demonstrated that both maternal and zygotic Zfp57 modulate NOTCH signaling in cardiac development. Loss of Zfp57 causes cardiac septation defects, thin myocardium and trabeculation defects. We are also exploring the roles of Zfp57 in other major human diseases such as diabetes and autism. In our previous studies, we found that genomic imprinting was variably lost in induced pluripotent stem (iPS) cells and Zfp57 was required for the maintenance of genomic imprinting in iPS cells as well. One of our long-term goals is to derive pluripotent stem cells with intact genomic imprinting suitable for future therapeutic applications.

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All are welcome