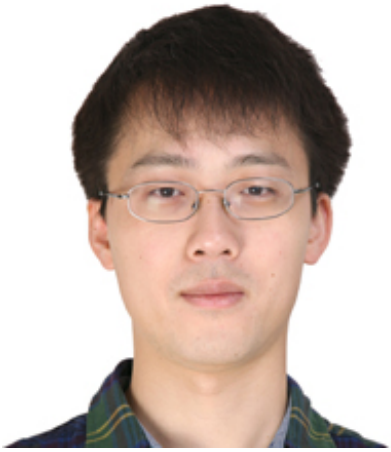
Institute of Molecular and Cell Biology
A*STAR

SEMINAR ANNOUNCEMENT

DATE: 27 February 2012, Monday
TIME / VENUE: 4:30PM @ Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis
SPEAKER: Dr. Sun Lei
TITLE OF SEMINAR: **Regulation of brown fat development by non-coding RNAs**



Dr. Sun Lei
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Mammals have two principal types of fat. White adipose tissue primarily serves to store extra energy as triglycerides, whereas brown adipose tissue (BAT) is specialized to burn lipids for heat generation and energy expenditure as a defence against cold and obesity. My long term goal is to determine the regulatory mechanisms governing BAT development as a prerequisite to the development of therapeutic strategies that can be used to combat obesity. Although several protein factors have been demonstrated to be essential in BAT development, the roles of non-coding genes, including microRNAs and lincRNAs (long intergenic non-coding RNAs), in thisprocess is largely unknown. Nevertheless, several observations from my previous studies have shed new light on this question. First, I have identified a BAT-enriched microRNA cluster, miR-193b-365 and demonstrate that miR-193b-365 is an essential regulator for brown adipocyte differentiation and lineage determination. In addition, in collaboration with John Rinn's group, I have found more than a hundred lncRNAs (long non-coding RNAs) that are up-regulated during both BAT and WAT adipogenesis. SiRNA-mediated loss-of-function screening has identified several lncRNAs controlling white adipocyte differentiation. One would predict that some lincRNAs also regulate BAT development. Together, these findings encourage me to continue investigating the roles of non-coding RNAs in BAT development in future.

Host: Prof. Wanjin Hong

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