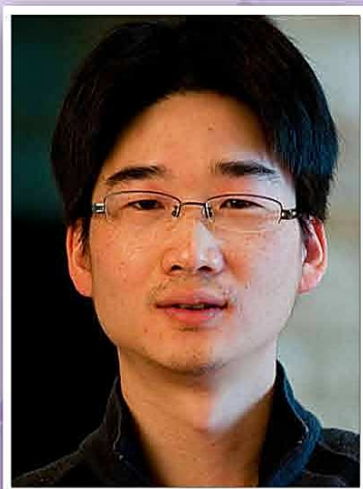


IMCB Invited Speaker



Speaker : Dr. Chengqi Lin
Postdoc, Stowers Institute for Medical Research, USA

Date : 3 April 2013 (Wednesday)

Time : 2:00PM - 3:00PM

Venue : IMCB Seminar Room 3-46, Level 3, Proteos, Biopolis

Host : Prof. Wang Yue

Seminar :

Transcriptional Elongation Control in Development and Cancer

Chromosomal translocations involving the *mixed lineage leukemia (MLL)* gene are associated with the pathogenesis of infant acute leukemia. To define the molecular reason why these translocations result in leukemic pathogenesis, I purified several of the commonly occurring MLL chimeras. This biochemical study resulted in the identification of the Super Elongation Complex (SEC). SEC is one of the most active P-TEFb-containing complexes and that SEC is required for rapid transcriptional activation in the presence or absence of paused Pol II. SEC regulates the proper expression of MLL chimera target genes, suggesting that the regulation of the transcription elongation checkpoint by SEC could play an essential role in leukemia. Interestingly, my studies have also demonstrated that the RNA Pol II elongation factor, ELL3, specifically occupies enhancers in embryonic stem cells, and is required for the future transcriptional activation of developmental genes via the recruitment of SEC during stem cell specification. In future, I plan to delineate the specific roles of different MLL-SEC subunit translocation in the leukemic pathogenesis, which will facilitate the development of effective treatments with increased selectivity to different types of leukemia. Also, I will take advantage of genetic and biochemical approaches to understand how ELL3 is associated with enhancers, and to determine the molecular signals that result in transcriptional activation of developmental genes via enhancer-promoter communications.

About the Speaker :

Chengqi Lin is currently a postgraduate researcher in the Shilatifard laboratory at the Stowers Institute for Medical Research, Kansas City, USA. He completed his doctorate at Stowers Institute in 2012. His major research interests involve the transcriptional elongation control in embryonic development and cancer pathogenesis, especially in hematopoietic malignancies. He identified the Super Elongation Complex (SEC) and showed that the regulation of the transcription elongation checkpoint by SEC could play an essential role in leukemia and normal development. Recently, he also demonstrated that the RNA Pol II elongation factor, ELL3, specifically occupying enhancers in embryonic stem cells, is required for the future transcriptional activation of developmental genes via the recruitment of SEC during stem cell specification.