

IMCB Invited Speaker



Speaker : Dr. Yun-Bo Shi
*Chief, Section on Molecular Morphogenesis,
National Institute of Child Health and Human Development,
National Institutes of Health, Bethesda, MD, USA*

Date : 17 December 2013, Tuesday

Time : 11:00AM - 12:00PM

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

Host : Prof. Wang Yue

Seminar :

Chromatin remodeling and histone modifications in thyroid hormone-dependent adult intestinal stem cell development

Thyroid hormone (T3) plays important roles in regulating vertebrate development and pathogenesis. We have been studying the T3-dependent development of the adult intestine during *Xenopus* metamorphosis as a model to study the formation of adult organ-specific stem cells, which are essential for organ homeostasis and tissue repair and regeneration throughout adult life. T3 exerts its metamorphic effects through T3 receptors (TRs). TRs recruit, in a T3-dependent manner, cofactor complexes for chromatin remodeling/histone modifications. We demonstrated for the first time *in vivo* during vertebrate development that TR induces the removal of core histones at the promoter regions *in vivo*. Furthermore, analyses of a number of histone activation and repression marks indicate that tissue and developmental context influences the roles of histone acetylation and methylation on target gene transcription during intestinal metamorphosis. Our findings provide important mechanistic insights on how chromatin remodeling affects developmental gene regulation *in vivo*.

About the Speaker :

Dr. Yun-Bo Shi is a senior investigator and the head of Section on Molecular Morphogenesis, NICHD, NIH. Dr. Shi received his BS degree from Wuhan University, China, in 1982 and PhD degree from University of California, Berkeley, in 1988. After postdoctoral training at Carnegie Institution, Baltimore, Dr. Shi established his own research group at NIH in 1992. Dr. Shi studies thyroid hormone-dependent *Xenopus* metamorphosis as a model for postembryonic human development. Dr. Shi has over 180 publications including a monograph on amphibian metamorphosis, and has received numerous recognitions, including the 2009 Award for outstanding accomplishments in biomedical research from NIH Asian & Pacific Islander American Organization and 2008 Van Meter Award by the American Thyroid Association. Dr. She was an editor of *Cell Research* from 2007 to 2010 and is currently the Editor-in-Chief of *Cell and Bioscience*, the official journal of the Society of Chinese Bioscientists in America.