Institute of Molecular and Cell Biology
A*STAR

SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by Prof. Wanjin Hong:

Date: 1 April 2019, Monday
Time: 11:00AM – 12:00PM
Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Prof. Peng Jinrong, College of Animal Sciences, Zhejiang University, China
Title **:** *hhex* null mutant develops an intrahepatic intestinal tube due to de-repression of cdx1b and pdx1

The hepatopancreatic duct (HPD) system links the liver and pancreas to the intestinal tube and is composed of the extrahepatic biliary duct, gallbladder and pancreatic duct. Haematopoietically-expressed-homeobox (Hhex) protein plays an essential role in the establishment of HPD, however, the molecular mechanism remains elusive. Here we show that zebrafish hhex-null mutants fail to develop the HPD system characterized by lacking the biliary marker Annexin A4 and the HPD marker sox9b. The hepatobiliary duct part of the mutant HPD system is replaced by an intrahepatic intestinal tube characterized by expressing the intestinal marker fatty-acid-binding–protein 2a (fabp2a). Cell lineage analysis showed that this intrahepatic intestinal tube is not originated from hepatocytes or cholangiocytes. Further analysis revealed that cdx1b and pdx1 were expressed ectopically in the intrahepatic intestinal tube and knockdown of cdx1b and pdx1 restored the expression of sox9b in the mutant. Chromatin-immunoprecipitation analysis shows that Hhex binds to the promoters of pdx1 and cdx1b genes to repress their expression. We therefore propose that Hhex, Cdx1b, Pdx1 and Sox9b form a genetic network governing the patterning and morphogenesis of the HPD and digestive tract systems in zebrafish.

Biography:
Jinrong Peng got his BSc in Sichuan University in 1984 and MSc in Shanghai Institute of Biochemistry in 1987. He then was appointed as an assistant lecturer at Fudan University. He received his PhD from John Innes Centre, a prestigious institute famous on plant molecular genetics, in 1993, and did his post-doc research in John Innes Centre from 1993-1999. He was appointed as a senior scientist by Institute of Molecular Agrobiology in 1999 and by IMCB in 2002. From later of 2008, he was appointed as a full professor by Zhejiang University. His lab mainly focuses on studying liver development and regeneration in zebrafish, has published a series of high impact papers in top notch journals.

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