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

"Shooting the Messenger: Rapid and Global mRNA Decay in Apoptosis"

by

Prof Judy Lieberman
Boston Children's Hospital and Harvard Medical School

Date : 4 November 2016
Time: 4:00pm to 5:30pm
Venue: Room 2-130, 1/F, Block 2, To Yuen Building, CityU

Abstract

Classical apoptosis plays a vital role in tissue remodeling during development and immunity. Apoptosis, a physiological program of cell suicide, is triggered by BCL-2 family protein-mediated mitochondrial outer membrane permeabilization (MOMP) and activation of caspase proteases. Heretofore apoptosis research has focused on protein degradation by the caspases, MOMP and DNA fragmentation. Post-transcriptional regulation of RNAs plays a critical role in many fundamental processes. Little is known about the fate of RNAs as cells die. Recently we found that mRNAs, but not noncoding (nc)RNAs, are rapidly, markedly and globally degraded during classical apoptosis, but not other forms of programmed cell death. Global decay of mRNAs occurs early before membrane lipid scrambling, genomic DNA fragmentation, and apoptotic changes to translation initiation factors and is responsible for translational arrest during apoptosis. In this talk we will describe the mechanism behind mRNA decay and why most ncRNAs are not affected.

About the speaker

Judy Lieberman is Chair in Cellular and Molecular Medicine in the Program in Cellular and Molecular Medicine at Boston Children's Hospital and Professor of Pediatrics at Harvard Medical School. She earned a Ph.D. in physics from Rockefeller University and worked as a theoretical physicist at the Institute for Advanced Study in Princeton and Fermilab. She left physics to become a physician. She received an M.D. from Harvard and MIT and trained in internal medicine and hematology-oncology at Tufts Medical Center, where she practiced hematology for about a decade. Her postdoctoral training in immunology was at MIT. She moved to Harvard Medical School in 1995. She served at Harvard Medical School as Director of the Division of AIDS from 2005 to 2009 and is now Chair of the Executive Committee on Immunology. She chaired the Medical Sciences Section of the AAAS from 2011-2012. She was elected to the American Association of Physicians and the American Academy of Arts and Sciences. The Lieberman laboratory has been in the forefront of studies of T cell immunology, microRNA biology, and RNAi therapeutics.

Contact

Dr Linfeng Huang (3442-4828, linfeng.huang@cityu.edu.hk)
Ms Irene Wong (3442-4707, irene.wong@cityu.edu.hk)

All are welcome