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

"DEVELOPMENT OF ANTI-ENTEROVIRUS 71 AGENTS THAT TARGET THE ER STRESS SIGNALING PATHWAY AND CAPSID PROTEIN VP1"

by

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Date : 20 January 2016
Time: 10am to 11.30am
Venue: G5-216, 5/F (green zone), Academic 1 Building, City University of Hong Kong

About the speaker

Dr. Jim-Tong Horng received his PhD degree from the Department of Biochemistry, the University of Cambridge, United Kingdom. He established his own laboratory at Chang Gung University, Taiwan, after finishing post-doctorate training at the Department of Biochemistry and Biophysics, the University of California, San Francisco. He is now the Professor and Head of the Department of Biochemistry and Biophysics. He is a cell biologist-turned-virologist and has been working on the aspects of viral replication and antiviral development in enterovirus 71 and influenza virus research for many years. His team has had some great achievements in the field of the development and mechanistic study of small molecules and herbal medicine that inhibit these viruses. He has published many research articles in prestigious journals, such as J. Biol. Chem., Cell. Microbiol., J. Med. Chem., and Antimicrob. Agents Chemother.

Abstract

Enterovirus 71 (EV71) belongs to the enterovirus genus of Picornaviridae, which mainly infects infants or children younger than 5 years of age and causes hand, foot, and mouth disease. Neurological complications, including encephalitis and aseptic meningitis, are frequently manifested upon severe infection. In this talk, I will describe how the three axes of the ER stress signaling pathways are modulated by EV71 for its replication. Targeting the molecules involved or the branches of the ER stress signaling pathways may provide a good foundation for the development of antiviral agents. My team was also interested in identifying small compounds with antiviral activity and studying the mechanisms underlying this activity. We screened a panel of diverse compounds that were potentially active against EV71 and finally identified two small compounds that targeted the viral capsid protein VP1. The antiviral potential of these compounds were confirmed in mouse experiments. Thus, VP1 may be a new target for the treatment of EV71 infections.