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Jockey Club College of Veterinary  
Medicine and Life Sciences

香港城市大學  
City University of Hong Kong  
in collaboration with Cornell University



# JCC Research Seminar



## TOPIC

Chemoproteomics-enabled identification of new druggable hotspots in cancers and development of therapeutic covalent ligands

Dr. Clive Yik-Sham CHUNG

Assistant Professor,

School of Biomedical Sciences and Department of Pathology  
The University of Hong Kong

### HONG KONG TIME

23 Jan 2024 (Tue)  
10:00am - 11:30am

### Venue:

LT-5 Mr and Mrs Lau Tat Chuen Lecture Theatre,  
Yeung Kin Man Academic Building  
Or Online via ZOOM

## Abstract:

Chemoproteomics is an advanced proteomics technology using chemical probes to study functions and activities of proteins. Since many functional proteins are associated with disease development and progression, the applications of chemoproteomics have been extended to drug target identification and covalent drug development, with EGFR, BTK and KRAS G12C covalent inhibitors as notably examples. In this talk, I will first showcase how the development of new chemoproteomic probes can significantly expand the pool of targetable hotspots, even on proteins which were once considered as undruggable. This enables us to develop novel covalent ligands with new mechanism of action for cancer therapy. As an illustration, I will discuss 2 different covalent ligands which can target new hotspots on cancer-related proteins in colorectal cancer and hepatocellular carcinoma respectively. They have demonstrated promising anticancer and anti-metastatic properties in 2D and 3D cancer cell culture, as well as in vivo. All these results highlight the powerful application of chemoproteomics in biomedical studies and drug research.

## Speaker's Biography:

Dr. Clive Yik-Sham CHUNG received his BSc and PhD degrees from the Department of Chemistry, The University of Hong Kong (HKU). He then did his postdoctoral research on inorganic medicines and nano-formulations at HKU. In 2016, he received Croucher Postdoctoral Fellowship and moved to UC Berkeley, working on molecular imaging to unravel roles of reactive oxygen species (ROS) and copper in biology. In 2018, he moved to Novartis-Berkeley Center for Proteomics and Chemistry Technologies in UC Berkeley, working on chemoproteomics and mass spectrometry (MS) for discovering covalent ligands that can modulate autophagy and mTORC1 signaling. In May 2020, Dr CHUNG re-joined HKU as an Assistant Professor in the School of Biomedical Sciences and Department of Pathology, School of Clinical Medicine. His lab is now actively working in the field of chemical biology, particularly interested in:

(1) developing new chemical tools to advance chemoproteomics experiments for mining new druggable hotspots in cancer; (2) developing new therapeutic covalent ligands for targeted cancer therapy; (3) studying redox biology.



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