THE CHINESE UNIVERSITY OF HONG KONG
FACULTY OF MEDICINE
SCHOOL OF BIOMEDICAL SCIENCES

SBS PI Seminar Series 2023-2024

Prof. CHAN Man Lok Andrew

Professor
School of Biomedical Sciences
Faculty of Medicine, The Chinese University of Hong Kong

will present a seminar entitled

"Functional links between PI3-K pathway and YKL-40: from brain cancer to Alzheimer's disease"

The phosphoinositide 3-kinase (PI3-K) pathway is a versatile conduit for diverse soluble ligands and is well-known for its pro-survival function in the context of cancer and Alzheimer's disease (AD). PTEN, a lipid phosphatase, is a negative regulator of the PI3-K pathway. The involvement of PTEN in AD was discovered based on the finding that Aβ-induced long-term depression in hippocampal neurons is mediated by PTEN recruitment to the postsynaptic junction through binding to a synaptic scaffold protein, PSD-95. Our laboratory has previously identified a transcriptional link between PTEN and a soluble biomarker of AD, YKL-40 in glioma cells. YKL-40 is a secreted astrocytic glycoprotein encoded by the human chitinase 3-like 1 (*Chi3l1*) gene and serves as a diagnostic biomarker of AD. High levels of YKL-40 are associated with either advanced AD or the normal aging process. However, the functional role of YKL-40 in AD development has not been firmly established. Using primary cultures and an astrocyte-specific knockout mouse strain of YKL-40, the *in vitro* and *in vivo* roles of this enigmatic AD-associated factor are delineated. Our results provide new insights into the role of YKL-40 in AD pathogenesis and demonstrate the potential of this soluble biomarker as a therapeutic target to alleviate cognitive decline in AD patients.

21 September 2023, Thursday, 4:00 – 5:00 pm

Room G02, Lo Kwee-Seong Integrated Biomedical Sciences Building,
Area 39, The Chinese University of Hong Kong