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

SBS PI Seminar Series 2023-2024

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will present a seminar entitled

TRPM2 channels promote atherosclerotic progression

Abstract: Atherosclerosis is a chronic inflammatory arterial disease characterized by excessive production of reactive oxygen species (ROS) in arterial walls. Transient receptor potential channel M2 (TRPM2) is a Ca^{2+}-permeable cation channel activated by oxidative stress. In the present study, we investigated the role of TRPM2 in atherosclerosis in a mouse model of atherosclerosis. Our study showed that TRPM2 knockout reduces the atherosclerotic plaque area. Mechanistic studies demonstrate that TRPM2 knockout reduces the expression of inflammatory cytokines, macrophage infiltration in vascular wall, smooth muscle cell proliferation and migration, and vascular smooth muscle cell death. Furthermore, we developed a strategy of active immunization with TRPM2 E3 domain peptide in a vaccine platform. We found immunization with this vaccine peptide could induce endogenous production of anti-TRPM2 blocking antibody in mice *in vivo*, consequently inhibiting TRPM2 channel activity to alleviate atherosclerotic progression. In conclusion, this study demonstrated that TRPM2 contributes to the progression of atherosclerosis and that TRPM2 E3 peptide vaccine could be a potential therapeutic option against atherosclerosis.

29 June 2023, Thursday, 4:00 – 5:00 pm

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