



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

SBS PI Seminar Series 2022-2023

Prof. CHAN Wai Yee

Pro-Vice-Chancellor / Vice-President (Strategic Developments)
Li Ka Shing Professor of Biomedical Sciences
The Chinese University of Hong Kong

will present a seminar entitled

“The molecular mechanisms of RNA-binding protein, RBM46, in regulating gametogenesis through affecting meiotic cohesion complex subunits”

Abstract

Infertility is a global health issue affecting millions of people. However, we still know very little about the pathogenesis and mechanism of infertility in most cases. RBM46 is a germ cell-specific RNA binding protein required for gametogenesis, but the targets and molecular functions of RBM46 is largely unknown. In our study, we demonstrated that RBM46 binds at specific motifs in the 3'UTRs of mRNAs encoding multiple meiotic cohesin subunits and that RBM46 is required for normal synaptonemal complex formation during meiosis initiation. Employing LACE-seq, we profiled the targets of RBM46 at single-nucleotide resolution in gametes at specific meiotic stages, namely, leptotene and zygotene stages. We observed that RBM46 preferentially binds target mRNAs containing GCCUAU/GUUCGA motifs in the 3'UTR region. In *Rbm46* knock-out mice, the RBM46-target cohesin complex subunits displayed unaltered mRNA levels but had reduced translation, resulting in failed assembly of axial elements, synapsis disruption, and meiotic arrest. Overall, our study provides mechanistic insights of the molecular functions of RBM46 in gametogenesis and suggests a previously unexplored cause of infertility.

9 March 2023, Thursday, 4:00 – 5:00 pm

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

Registration link

<https://webapp.sbs.cuhk.edu.hk/eform/view.php?id=101112>

Deadline: 12:00 noon, 8 March 2023 (Wed)

