SINGAPORE RNA
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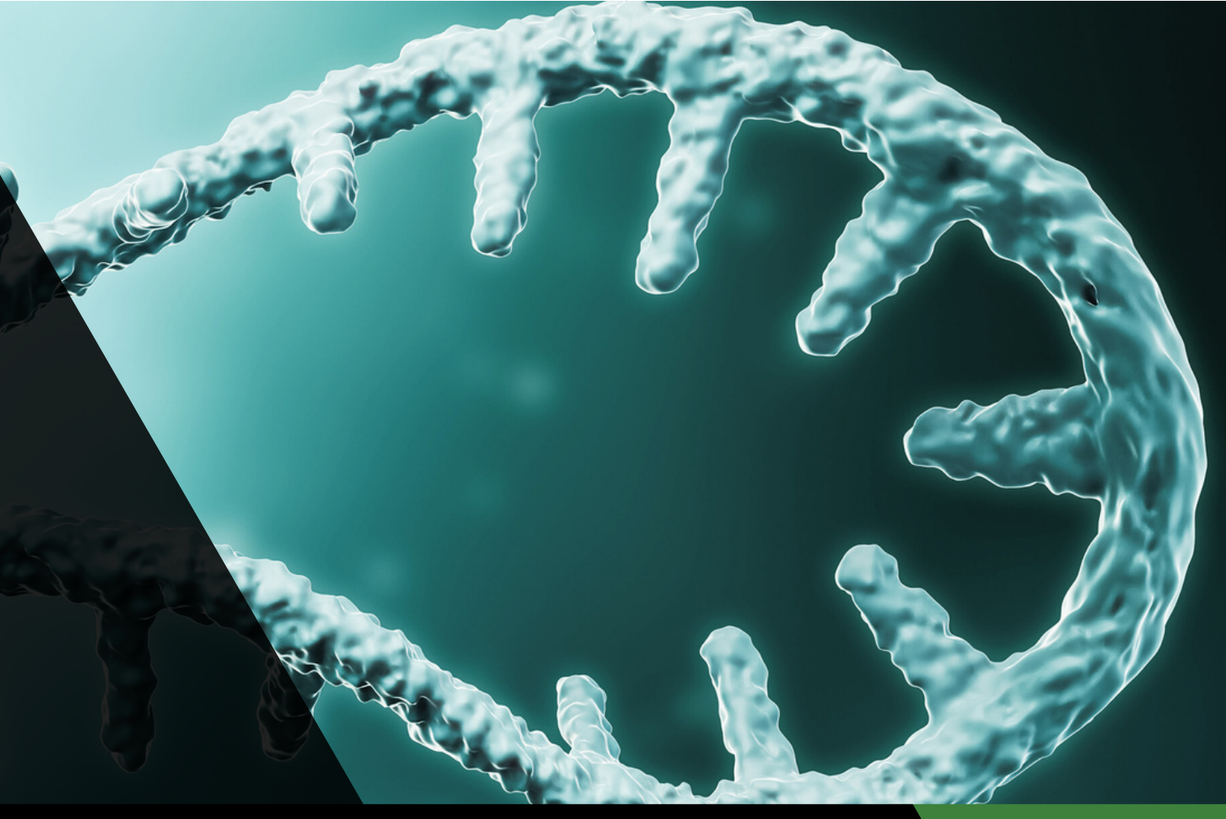

Z-NUCLEIC ACID SENSOR ZBP1 IN CELL DEATH AND INFLAMMATION

Tuesday 4 March 2025
11.00am (SGT , GMT+8)

Via Zoom

About the speaker

Huipeng Jiao received his B.S. degree in Biological Sciences from Zhejiang University in 2010. He obtained his Ph.D. degree from National University of Singapore in 2015 and completed postdoctoral training at University of Cologne in 2022. He has joined Life Sciences Institute at Zhejiang University as a tenure-track investigator since September 2022. His lab focuses on studying the regulatory mechanisms of cell death and inflammatory diseases. His research established the link between Z-nucleic acid sensing and ZBP1-mediated cell death and inflammation. He has published several research articles as a (co-)first author (Nature 2, Cell Reports, Cell Death and Differentiation, etc.).

Dr. Huipeng Jiao
IInvestigator
Life Sciences Institute, Zhejiang University

About the seminar

Z-nucleic acids are double-stranded nucleic acids (DNA or RNA) that adopt a left-handed helical structure with a characteristic zigzag pattern in the sugar-phosphate backbone. ADAR1 and ZBP1 are the only two proteins in mammals known to harbour Zα domains that recognize Z-nucleic acids. By generating different inflammatory diseases mouse models, we have demonstrated that Zα-dependent sensing of endogenous ligands induces ZBP1-mediated perinatal lethality in mice expressing RIPK1 with mutated RHIM (Ripk1mR/mR), skin inflammation in mice with epidermis-specific RIPK1 deficiency (RIPK1E-KO), colitis in mice with intestinal epithelial-specific FADD deficiency (FADDIEC-KO) and pathogenic type I IFN responses in mice with hemizygous expression of ADAR1 with mutated Zα domain (Adar1mZα/–). Our recent studies identified spliceosome as a checkpoint preventing Z-nucleic acids accumulation, which contributes to ZBP1-dependent cell death.

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