“Structural basis and regulation mechanism of inflammatory cell death”

Prof Jixi Li
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Date: 20 May 2019
Time: 15:00 - 16:30
Venue: YEUNG-B4701, 4/F, Yeung Kin Man Academic Building

Abstract
Necroptosis and pyroptosis are two kinds of inflammatory cell death. The RIP1/RIP3 necrosome is an amyloid signaling complex that initiates TNF-induced necroptosis, serving in human immune defense, cancer and neurodegenerative diseases. RIP1 and RIP3 associate through their RIP homotypic interaction motifs. We identified RIP1/RIP3 forms a functional amyloid complex in cell necroptosis (2012, Cell). Recently, we solved the high-resolution structure of the RIP1-RIP3 core, the first detailed structure of a hetero-amyloid (2018, Cell), and provided a potential explanation for the specificity of hetero- over homo-amyloid formation and a structural basis for understanding the mechanisms of signal transduction. Moreover, we identified a novel TRIM family protein that interacted and ubiquitinated RIP3 and, therefore negatively regulated cell necroptosis.

About the Speaker
Prof Jixi Li obtained his BSc and MSc degrees from Zhejiang University and PhD in Genetics from Fudan University. From 2006 to 2014, he worked as a postdoctoral fellow at the California Institute of Technology (tutor: Prof Alexander Varshavsky) and Cornell Medical School and Harvard Medical School / Boston Children’s Hospital (tutor: Prof Hao Wu). In 2014, he joined School of Life Sciences Fudan University as a Talent Youth Program recipient and an “Oriental Scholar” Distinguished Professor.

Prof Li applies structural biology, biochemistry and biophysics to study the threedimensional structural basis of natural immune response-related protein complexes and molecular mechanisms. His main research directions include: 1. programmed cell death and inflammatory proteins related structural and biological research; 2. the natural immune response in neurodegenerative diseases.

References:

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