Microsymposium

MS16.O01

Structural insight into autoinhibition of the NOD-like receptor NLRC4

Z. Hu[1], J. Chai[1]

[1]*Tsinghua University, School of Life Sciences, Beijing 100084, China*

NOD-like receptor (NLR) proteins constitute a large family of intracellular innate immune receptors. NLRs respond to pathogen-derived signature components or host-derived danger signals, oligomerizing into multiprotein signaling complexes termed inflammasomes that catalyze caspase-1 activation. The NLRC4 (NLR family caspase-recruiting domain (CARD)-containing protein 4) inflammasome is activated by bacterial pathogens carrying the bacterial flagellin or the components of type 3 secretion systems. NAIP (NLR family, apoptosis inhibitory protein) family members dictate the specificity of the NLRC4 inflammasome for different bacterial ligands, with NAIP5/6 and NAIP2 directly recognizing the bacterial flagellin and the T3SS rod protein PrgJ in mice, respectively. We recently solved the crystal structure of NLRC4 in its auotinhibition form. In the current presentation, I discuss the NLRC4 autoinhibtion mechanism and its implications for autoinhbition of other NLR members. I also touch on in vitro reconstitution of the NLRC4 inflammasome and study of its Cryo-EM structure.

Keywords: NLR, Inflammasome, NLRC4