Caspase recruitment domain-containing protein 9 signaling in innate immunity and inflammation.

Abstract: Caspase recruitment domain-containing protein (Card)9 is a nonredundant adapter protein that functions in the innate immune system in the assembly of multifunctional signaling complexes. Together with B cell lymphoma (Bcl)10 and the paracaspase, mucosa-associated lymphoid tissue lymphoma translocation protein (Malt)1, Card9 links spleen-tyrosine kinase (Syk)-coupled C-type lectin receptors to inflammatory responses. Card9 signaling also responds to intracellular danger sensors, such as retinoic acid-inducible gene 1 (RIG-I)-like receptors (RLRs) and nucleotide-oligomerization domain (Nod)2. Card9 complexes are engaged upon fungal, bacterial, or viral recognition, and they are essential for host protection. Moreover, Card9 polymorphisms are commonly associated with human inflammatory diseases. Here, we discuss the molecular regulation and the physiological functions of Card9 in host defense and immune homeostasis, and provide a framework for the therapeutic targeting of Card9 signaling in immune-mediated diseases.

Zeitschriftentitel / Abkürzung: Trends Immunol

Jahr: 2013
Band: 34
Heft / Issue: 6