VABILO NA PREDAVANJE
V OKVIRU DOKTORSKEGA ŠTUDIJA
KEMIJSKE ZNANOSTI

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z naslovom:

Signalling by cooperative assembly formation (SCAF) by TIR domains in innate immunity and cell death pathways

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Vljudno vabljeni!
Abstract:

TIR (Toll/interleukin-1 receptor, resistance protein) domains are key components of innate immunity signaling pathways. They are found in animals, plants and bacteria, for example in TLRs (Toll-like receptors) and TLR adaptors in animals, NLRs (nucleotide binding, leucine-rich repeat receptors) in plants, and virulence factors interfering with immune responses in bacteria. Signaling depends on self-association and homotypic association of TIR domains, but the molecular basis of this association has remained elusive [1,2]. We have been able to reconstitute large assemblies of the TLR adaptors MAL and MyD88, and determined the structure of the filamentous assembly of MAL by cryo-electron microscopy [3]. As an unexpected twist, we (unpublished) and others [4] have shown that the TIR domain of the TLR adaptor SARM possesses self-association-dependent NAD+ cleavage activity. Jointly, these studies suggest a general mechanism of function of TIR domains, which involves "signaling by cooperative assembly formation (SCAF)" with prion-like features that leads to the activation of effector enzymes. Some TIR domains can themselves function as effector enzymes.

References