

Special Issue

Molecular Research on Inflammasome Signaling

Message from the Guest Editor

This Special Issue focuses on the molecular mechanisms underlying inflammasome assembly, activation, and signaling beyond canonical NLRP3 pathways. We welcome submissions addressing the following: structural and functional characterization of under-studied inflammasomes (NLRP6, NLRP12, CARD8, MxA); molecular determinants of cell-type-specific activation thresholds and protein expression patterns; protein–protein interactions in PANoptosome assembly that integrate pyroptosis, apoptosis, and necroptosis pathways; structural biology of pathogen protein–inflammasome sensor interactions, including viral modulators and variant-specific binding interfaces; gasdermin activation mechanisms beyond canonical caspase-1 cleavage; epigenome and post-translational modifications regulating inflammasome component activity; and molecular crosstalk between inflammasomes and metabolic, circadian, or DNA-damage-sensing pathways. Of particular interest are studies employing structural biology, biochemical reconstitution, advanced imaging, or computational modeling to elucidate activation mechanisms, oligomerization dynamics, and downstream signaling cascades.

Guest Editor

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Deadline for manuscript submissions

30 June 2026



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/266468

*International Journal of
Molecular Sciences*
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Message from the Editor-in-Chief

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