Heme Unleashed: NLRP12 Orchestrates PANoptosis in a Symphony of Cell Fate

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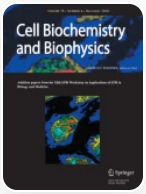

Cell Biochemistry and Biophysics

Aims and scope

Submit manuscript

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Abstract

Pattern recognition receptors (PRRs) help protect hosts from pathogens in different ways. They bind to pathogen-associated molecular patterns (PAMPs), damage-associated molecular patterns (DAMPs), or other homeostatic irregularities caused by these patterns to activate an immune response against a pathogen. Certain PRRs activate inflammasomes, leading to cell death and the formation of PANoptosomes, a key process in PANoptosis. PRRs help protect against pathogens, however an excessive number can cause harm to the body and even death. The mechanisms of how to control the PRRs remain unknown. Sundaram et al. [1] address this gap by investigating pathways that activate PANoptosomes in infection-mimicking conditions. They found that the sensor NLRP12 activated PANoptosomes causes

inflammation in response to infections leading to the hypothesis that targeting the sensor NLRP12 could be a means to stop the harmful effects of excessive PRRs.This discovery suggests that targeting NLRP12 could mitigate the harmful effects of PRR overactivation, offering a potential therapeutic avenue.

Data Availability

No datasets were generated or analysed during the current study.

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N.N.: wrote the article, V.K.Y: wrote the article, K.R.: Revised the manuscript, S.R.D.: Revised and approved. N.K.: Revised and approved.

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Ethics declarations

Conflict of interest

The authors declare no competing interests.

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PANoptosis PANoptosome complex Pathogen associated molecular patterns (PAMP) Heme NLRP3 NLRP12