

3 An NLRP7-containing inflammasome mediates recognition of microbial lipopeptides in human macrophages.

Khare S, Dorfleutner A, Bryan NB, Yun C, Radian AD, de Almeida L, Rojanasakul Y, Stehlik C
[show author affiliations](#)

Immunity. 2012 Mar 23; 36(3):464-76

Save/Follow

Export

Get Article

Find it @ NU

G+

RECOMMENDATIONS 1 | ABSTRACT | COMMENTS

[expand all](#)

Recommendations:

Exceptional

28 May 2013



Kathy Triantafilou

F1000 Immunology
 University of Cardiff, Cardiff, UK.

NEW FINDING

DOI: 10.3410/f.717968582.793468367

This superb article demonstrates for the first time that bacterial lipoproteins can activate NLRP7. Therefore, Toll-like receptor 2 (TLR2) seems to recognise bacterial lipoproteins on the cell surface, but NLRP7 acts as the intracellular sensor for these lipoproteins. The authors demonstrate that by knocking down either TLR2 or NLRP7 there is less inflammasome activation and secretion of interleukin-1 β (IL-1 β). It is interesting to note that the authors suggest that the activation mechanism of NLRP7 is different to that of NLRP3.

Disclosures

None declared

[Add a comment](#)

Abstract:

ABSTRACT

Cytosolic pathogen- and damage-associated molecular patterns are sensed by pattern recognition receptors, including members of the nucleotide-binding domain and leucine-rich repeat-containing gene family (NLR), which cause inflammasome assembly and caspase-1 activation to promote maturation and release of the inflammatory cytokines interleukin-1 β (IL-1 β) and IL-18 and induction of pyroptosis. However, the contribution of most of the NLRs to innate immunity, host defense, and inflammasome activation and their specific agonists are still unknown.... [more »](#)

Here we describe identification and characterization of an NLRP7 inflammasome in human macrophages, which is induced in response to microbial acylated lipopeptides.

Activation of NLRP7 promoted ASC-dependent caspase-1 activation, IL-1 β and IL-18 maturation, and restriction of intracellular bacterial replication, but not caspase-1-independent secretion of the proinflammatory cytokines IL-6 and tumor necrosis factor- α . Our study therefore increases our currently limited understanding of NLR activation, inflammasome assembly, and maturation of IL-1 β and IL-18 in human macrophages.

Copyright © 2012 Elsevier Inc. All rights reserved.

DOI: 10.1016/j.immuni.2012.02.001

PMID: 22361007

Abstract courtesy of PubMed: A service of the National

Good news! *Northwestern University* has a subscription to F1000, so you have full access to the new F1000Workspace suite of tools for collecting, writing and discussing scientific literature.

FIND OUT MORE

close

F1000 Faculty Reviews (incorporating **F1000Prime Reports**) are comprehensive, open access, topical reviews written by members of the prestigious **F1000 Faculty**. These peer reviewed articles provide context on emerging themes in biology and medicine.

[view all](#)

Microbiology | Genomics & Genetics | Gastrointestinal Biology | Evolutionary Biology | Molecular Medicine | Physiology | Biotechnology | Gastroenterology & Hepatology | Bioinformatics & Computational Biology | Neurological Disorders | Infectious Diseases | Cell Biology | Public Health & Epidemiology | Immunology

Advances in understanding Giardia: determinants and mechanisms of chronic sequelae

Luther A. Bartelt, R. Balfour Sartor
F1000Prime Reports 2015 7:(62) (26 May 2015)

[Full text](#) | [PDF](#) | [Abstract on PubMed](#)

Renal Biology | Microbiology | Genomics & Genetics | Molecular Medicine | Cardiovascular Disorders | Biotechnology | Bioinformatics & Computational Biology | Pharmacology & Drug Discovery | Nephrology | Cell Biology | Anesthesiology & Pain Management | Immunology

Recent advances in renal transplantation: antibody-mediated rejection takes center stage

Eric Poulquen, Alice Koenig, Chien Chia Chen, Antoine Sicard, Maud Rabeyrin, Emmanuel Morelon, Valérie Dubois, Olivier Thauvat
F1000Prime Reports 2015 7:(51) (12 May 2015)

[Full text](#) | [PDF](#) | [Abstract on PubMed](#)

Librarian Resources

Press Office

F1000 Specialists

F1000 Updates

About/Contact

Article Recommendations

F1000Prime Reports

F1000Prime Faculty

Blog

Subscribe

F1000 Mobile

About

FAQs

Contact

Articles

Advisory Panel

Blog

Submit

Author Guidelines

Register

About

Contact

Download the [mobile app](#) today

© 2000-2015 Faculty of 1000 Ltd. ISSN 2051-9796 | Legal | Partner of HINARI • CrossRef • ORCID
F1000 is a registered trademark of Faculty of 1000 Limited