



*Special Issue Reprint*

## **The Role of Toll-Like Receptors (TLR) in Infection and Inflammation**

Edited By:

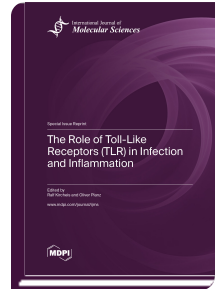
Ralf Kircheis

Oliver Planz

[mdpi.com/books/pdfview/book/7355](https://www.mdpi.com/books/pdfview/book/7355)

ISBN 978-3-0365-7615-2 (hardback)

ISBN 978-3-0365-7614-5 (PDF)



Toll-like receptors (TLRs) represent a powerful system for the recognition and elimination of pathogen-associated molecular patterns (PAMPs) from bacteria, viruses, and other pathogens and damage-associated molecular patterns (DAMPs) released from dying cells. Typical PAMPs include bacterial cell wall components, viral pathogens, or pathogenic nucleic acids, including viral RNA and DNA. Activation of TLRs leads to the production of proinflammatory cytokines and type I interferons which are important for the induction of the host immune response against bacterial and viral infections. However, dysregulation and overstimulation can be detrimental, leading to hyperinflammation, sepsis, and loss of tissue integrity. The involvement of TLRs in inflammation and bacterial infection has been recognized for a long time. There is an increasing number of reports demonstrating the involvement of TLR activation in a variety of viral infections, associated with protective immunity, but also immune hyperactivation and even viral replication. Recent data show the involvement of TLR activation in various acute respiratory viral infections, including SARS-CoV-2 and indicate an essential role in COVID-19 pathology. It aimed to gather newest data and hypotheses regarding molecular and cellular mechanisms of TLR triggering and activation and their downstream signaling pathways by viral infections, and their correlation to immunology and pathophysiology of the associated diseases, to facilitate translational research resulting in new targets for the treatment of viral infectious diseases including COVID-19.



Order Your Print Copy

Print copies (170x244mm, Pbk) can be ordered at:

[www.mdpi.com/books/pdfview/book/7355](https://www.mdpi.com/books/pdfview/book/7355)

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



### **Open Access**

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



### **Author Focus**

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



### **High Quality & Rapid Publication**

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



### **High Visibility**

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis lieferbarer Bücher (VLB).



### **Print on Demand and Multiple Formats**

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.