



The Role of Toll-Like Receptors (TLRs) in Infection and Inflammation: Third Edition

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Message from the Guest Editors

Dear Colleagues,

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 of damage-associated molecular patterns (DAMPs) released from dying or lytic cells. TLRs are mainly expressed on immune cells but can also be present on some tissue-resident cell populations. Typical PAMPs are cell wall components of bacterial and viral pathogens, conserved proteins, 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, fungal, and viral infections and malaria. However, dysregulation and overstimulation can be detrimental, leading to hyperinflammation, sepsis, and loss of tissue integrity. Altogether, activation of TLR plays a deciding role in both the induction of immunity and the pathophysiological effects associated with excessive activation.

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