



Hindawi

Journal of Immunology Research

Special Issue on
**Recent Advances in the Host Immunity to
Mycobacterium tuberculosis Infection**

CALL FOR PAPERS

Tuberculosis (TB) alongside HIV infection now ranks as the world's most deadly infectious disease in humans. In 2014, approximately 9.6 million people developed TB and 1.5 million died from this disease worldwide. *M. tuberculosis*, the etiologic agent of TB, is a highly successful pathogen and its strength lies in establishing latent infections, active disease with effective transmissions, as well as in its ability to coexist with other dreadful infectious agents such as HIV. The host mounts a robust immune response against this resilient pathogen, which includes early responses mediated by innate immune cells, such as macrophages, dendritic cells, and neutrophils, while B cells, CD4⁺, CD8⁺ T cells, and other unconventional T cells constitute the adaptive arm of host immunity. These cells mediate their effector functions on mycobacteria to successfully confine the infection. The precise roles of various immune cell types and their mediators have not been fully understood, but it is increasingly recognized that the cross talk between these different players has to be tightly regulated during *M. tuberculosis* infection. The protection exists as long as immune responses firmly control bacterial replication and disease, while pathology develops once this control is lost. The success of mycobacterial infection often relies on its ability to evade immune-surveillance mechanisms by modulating host signal transduction pathways and exploiting the imbalance in immune-regulation to exert pathogenesis. Therefore, the key to control mycobacterial growth and limit pathogenesis lies in understanding the role of each participant of the cross talk in host-pathogen interactions, mechanisms of mycobacterial immune evasion and determinants of pathogenesis, correlates of host protection, and conception of new generation protective vaccines.

The current special issue will address various aspects of cross talk between *M. tuberculosis* and immune system in the context of host infections, coinfections, or novel vaccinations leading to an advancement in the immune-prophylactic and therapeutic measures.

Potential topics include, but are not limited to:

- ▶ Innate and adaptive immune responses to *M. tuberculosis* and its antigenic components at the mucosal and systemic sites
- ▶ Signaling events in the immune cells
- ▶ Proinflammatory and anti-inflammatory responses following interaction of *M. tuberculosis* with immune as well as accessory cells
- ▶ Immune evasion and mechanisms of pathogenesis
- ▶ Novel vaccine studies
- ▶ Experimental animal models
- ▶ Human clinical studies
- ▶ Adjunct host-directed therapies and immunomodulation
- ▶ Immunodiagnostic tools and biomarkers to differentiate latent infection and active TB disease
- ▶ Immune responses in coinfections and comorbidities
- ▶ Immunogenetics, epigenetics, and omics studies
- ▶ *In silico* tools and development of new assays and technologies to investigate mycobacterium-specific immunity

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jir/rahi/>.

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