

## Immuno-Diagnosis of Active Tuberculosis

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### Abstract

**Background:** Tuberculosis disease, caused by *Mycobacterium tuberculosis* (MTB) remains a major global health concern, causing millions of deaths annually.

**Objective:** The aim of this presentation is to discuss the potential of immuno-diagnosis for active tuberculosis (ATB) as a promising approach to address challenges associated with TB diagnosis.

**Methods:** Current TB diagnostic methods have limitations, and a point-of-care immuno-diagnostic test that can distinguish ATB from Latent Tuberculosis Infection (LTBI) and estimate the MTB body load could guide ATB management and prioritize LTB treatment at the community level. Immune-based POC tests offer advantages such as low invasiveness, simplicity, and cost-effectiveness.

Potential approaches for MTB immune-diagnosis include serological diagnosis, investigation of cell-mediated responses, immune metabolic markers, blood transcriptomic signatures, and immune profiling. Various body samples like blood, saliva, sputum, exudative fluids, and urine can be used to identify novel immune markers for ATB diagnosis.

**Conclusions:** Immuno-diagnosis holds promise for improving TB diagnosis, and ongoing research aims to develop user-friendly, sensitive, and specific tests for ATB and LTB management. This presentation will give an overview of the current progress in *Mycobacterium tuberculosis* immuno-diagnosis.

**Key words:** Tuberculosis diagnosis, *Mycobacterium tuberculosis* (MTB)