



# Magdalena Druszczyńska

ASSOCIATE PROFESSOR – UNIVERSITY OF LODZ

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🆔 0000-0001-9386-4809 | Scopus bibliometric data: citations 782 · documents 57 · h-index 17

## Currently held positions

**Department of Immunology and Infectious Biology, Institute of Microbiology, Biotechnology and Immunology, Faculty of Biology and Environmental Protection**

University of Lodz

ASSOCIATE PROFESSOR

## Scientific profile and collaborations

My scientific research focuses on molecular microbiology, with a primary emphasis on *Mycobacterium tuberculosis* (M.tb), the pathogen responsible for tuberculosis. I am particularly interested in understanding the mechanisms of immune responses induced by BCG vaccination and by virulent M.tb strains, aiming to identify biomarkers that distinguish active from latent infection. My studies are conducted in collaboration with clinicians specializing in adult and pediatric lung diseases at the Regional Specialized Hospital of Tuberculosis and Lung Diseases in Łódź, Poland, as well as with experts in laboratory mycobacterial diagnostics.

I have extensive experience in mycobacterial research, gained through interdisciplinary collaborations combining immunology, clinical studies, and advanced diagnostic methods. My work includes developing an LC-MS/MS-based screening approach for mycobacterial infections using mycolic acid profiling, which has the potential to improve the speed and accuracy of tuberculosis diagnosis.

In addition to research on tuberculosis, I am interested in optimizing diagnostic and therapeutic strategies for pediatric TB, where current microbiological, serological, and genetic methods remain insufficient. I am exploring measurable indicators of protective immunity and active disease, aiming to enhance early detection and guide the development of effective interventions.

My research integrates microbiology, immunology, and translational medicine, with the dual goal of advancing fundamental knowledge of host-pathogen interactions and developing innovative approaches to improve TB diagnosis and treatment. Through these interdisciplinary efforts, my work has the potential to contribute to better clinical management of tuberculosis, particularly in children, and to support the development of new preventive and therapeutic strategies.

## Selected publications

- 2022 **Targeted metabolomics analysis of serum and *Mycobacterium tuberculosis* antigen-stimulated blood cultures of pediatric patients with active and latent tuberculosis** [\[link\]](#)
- 2021 **Cytokine biosignature of active and latent *Mycobacterium tuberculosis* infection in children** [\[link\]](#)
- 2025 **Immunomodulatory effect of the bacillus Calmette–Guérin (BCG) vaccine on the in vitro interferon response induced by respiratory syncytial virus (RSV) and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antigens** [\[link\]](#)

## Research grants

**Principal Investigator:** 1 grant: NCN

**Co-Investigator:** 8 grants: KBN, NCN, MNiSW, NCBiR

## International research stays

**Finland, Oulu, Department of Medical Microbiology**