





# Katarzyna Dzitko

ASSOCIATE PROFESSOR – UNIVERSITY OF LODZ · DIRECTOR – BIOMedCHEM DOCTORAL SCHOOL

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## Currently held positions

**BioMedChem Doctoral School of the University of Lodz and Lodz Institutes of the Polish Academy of Sciences**

Łódź

DIRECTOR

**Department of Molecular Microbiology, 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 *Toxoplasma gondii*, the parasite responsible for **toxoplasmosis**. I am actively involved in developing novel therapeutic strategies, including testing **new drugs** and utilizing **adeno-associated viruses (AAV)** as vectors for targeted gene therapy. These studies are conducted in collaboration with the **Medical University of Lublin**, Poland, and the **Translational Vectorology Unit at the Children's Medical Research Institute (CMRI)** in Australia, together with the **Military Institute of Medicine – State Research Institute**, Warsaw, Poland. I have extensive experience in *T. gondii* research, gained both in Poland and during my fellowship at **Heinrich Heine University Düsseldorf**, Germany. My research has focused on **identifying virulence factors** in *T. gondii* and investigating the **immunological mechanisms** that underlie the infection. In addition to my work on parasitic diseases, I am also involved in developing new therapies for **fungal infections**. Specifically, I am testing **hydrogel-based drug delivery systems** designed for **gynecological treatments**, in collaboration with the **Centre for Molecular and Macromolecular Studies, Polish Academy of Sciences (CBMM PAN)** in Łódź, Poland. This project aims to **improve the management of infections in the female reproductive system** by enhancing drug delivery effectiveness. My research integrates **microbiology**, **biotechnology**, and **immunology**, with the dual goal of advancing **fundamental knowledge** and developing **innovative therapeutic methods**. Through these interdisciplinary approaches, my work has the potential to **revolutionize the treatment of parasitic diseases** and improve therapies for **fungal infections**, ultimately contributing to new **clinical applications** and treatments.

## Selected publications

- 2022 **4-Arylthiosemicarbazide derivatives - Pharmacokinetics, toxicity and anti-Toxoplasma gondii activity in vivo** [\[link\]](#)
- 2021 **4-Arylthiosemicarbazide derivatives as a new class of tyrosinase inhibitors and anti-Toxoplasma gondii agents** [\[link\]](#)
- 2001 **Towards the Toxoplasma gondii proteome: Position of 13 parasite excretory antigens on a standardized map of two-dimensionally separated tachyzoite proteins** [\[link\]](#)

## Research grants

**Principal Investigator:** 4 grants: KBN, NCN

**Project Manager:** 2 grants: NCN, CTT Incubator – MNiSW

**Co-Investigator:** 9 grants: KBN, NCN, MNiSW, NCBiR, The European Commission's HORIZON 2020 project

## Obtained patents

11 patents given by Polish Patent Office

## International research stays

**Germany, Düsseldorf, Heinrich Heine University Düsseldorf**, team of Prof. Hans-Georg Fischer

**Australia, Sydney, Translational Vectorology Unit at the Children's Medical Research Institute (CMRI)**, team of Prof. Leszek Lisowski