



Magdalena Mikolajczyk-Chmiela

PROFESSOR & DIRECTOR OF THE DEPARTMENT – UNIVERSITY OF LODZ

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Currently held positions

Department of Immunology and Infectious Biology, Faculty of Biology and Environmental Protection

University of Lodz

PROFESSOR

Department of Immunology and Infectious Biology, Faculty of Biology and Environmental Protection

University of Lodz

DIRECTOR

Scientific profile and collaborations

Pathogenesis, diagnostic and prevention of *H. pylori* infections, responsible for gastric and duodenal ulcers and even gastric cancer and linked with systemic diseases i.e. coronary heart disease or hepatic disorders. **Work on *H. pylori* was initiated in 1992 during my research in-tership at the Department of Medical Microbiology, Lund University, Lund, Sweden** (Director: Prof. Torkel Wadström). I had the opportunity to carry out individual research project on immune processes during *H. pylori* infections. This research resulted in several scientific publications in impacted journals and development in Department of Immunology and Infectious Biology University of Lodz of research projects supported by Committee for Scientific Research, Ministry of Science and Higher Education as well as National Center of Science. It has been shown **that *H. pylori* components disrupt the gastric epithelium, initiate local and systemic inflammatory responses, and diminish the activity of immunocompetent cells. We selected new diagnostic signatures to identify *H. pylori* infections** based on serological, cellular, molecular, and metabolomic analyses. **The strategy to search for new therapeutic solutions** resulted in the development of microparticles loaded with plant extracts or *M. bovis* BCG bacilli with immunomodulatory properties, the use of which in vitro and in vivo limited *H. pylori* colonization.

Cooperation (major): Dept Med Microbiol, Lund Univ, Lund, Sweden; Dept Med Microbiol, National Univ of Ireland, Galway, Ireland; IRIS, Siena, Italy; Centro Pfizer – GENYO, Univ. de Granada, Granada, Spain); Dept Immunol and Allergy, Med Univ of Lodz, Lodz, Poland; Clin and Dept Cardiol, Med Univ of Lodz, Lodz, Poland; Dept. Gastroenterol and Pediatrics, Polish Mother's Memorial Hosp, Lodz, Poland; Dept. Mol. Bacteriol, Intercollegiate Faculty of Biotechnol UG-MUG, Med Univ of Gdańsk, Gdańsk, Poland; Centre of Mol and Macromol Studies, Polish Acad of Sci, Lodz, Poland; Faculty of Natural Sci, Jan Kochanowski Univ, Kielce, Poland; Dept Biol and Pharm Botany, Med Univ of Lodz, Lodz, Poland; Lab of Human Metabolism Res, Warsaw Univ of Life Sci, Warsaw, Poland.

Selected publications

- 2019 *The effect of Helicobacter pylori infection and different H. pylori components on the proliferation and apoptosis of gastric epithelial cells and fibroblasts* [\[link\]](#)
- 2023 *Mycobacterium bovis BCG increase the selected determinants of monocyte/macrophage activity, which were diminished in response to gastric pathogen Helicobacter pylori* [\[link\]](#)
- 2024 *Spray-dried pH sensitive chitosan microparticles loaded with Mycobacterium bovis BCG intended for supporting treatment of Helicobacter pylori infection* [\[link\]](#)

Research grants

Principal Investigator: 3 grants: KBN, MNiSW, NCN, EU B+R+I

Co-Investigator: 8 grants: KBN, MNiSW, NCN, EU B+R+I

Scientific supervisor: 4 grants: KBN, MNiSW, NCN, EU B+R+I

Obtained patents

5 patents (Polish Patent Office) & 2 patents applications

International research stays

Sweden, Dept Med Microbiol Lund Univ, Lund Sweden (Prof. Torkel Wadstrom)

France, Univ of Bordeaux, Bordeaux, France (Prof. Francis Megraud)

Ireland, Dept Microbiol, National Univ of Ireland, Galway, Ireland (Prof. Anthony P. Moran)