



# Barbara Klajnert-Maculewicz

PROFESSOR – UNIVERSITY OF LODZ

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## Currently held positions

Department of General Biophysics, Faculty of Biology and Environmental Protection

University of Lodz

PROFESSOR

## Scientific profile and collaborations

My area of interest is **nanomedicine**, particularly the use of various nanosystems for **drug delivery** and the investigation of their therapeutic properties. Most of my research focuses on **dendrimers**, but in recent years I have also studied polymersomes, dendrimersomes, gold nanoparticles, and hydrogels. I explore these systems in the context of their application in **cancer therapies**, with a special emphasis on **photodynamic therapy**. In the past, I have also investigated the use of dendrimers as therapeutic agents in **neurodegenerative diseases**, such as prion diseases and Alzheimer's disease. I conduct my research in international collaboration with numerous institutions, including those in the USA, France, Germany, Spain, and Italy.

## Selected publications

- 2021 *Selective anticervical cancer injectable and self-healable hydrogel platforms constructed of drug-loading cross-linkable unimolecular micelles in a single and combination therapy* [\[link\]](#)
- 2022 *Noncovalent interactions with PAMAM and PPI dendrimers promote the cellular uptake and photodynamic activity of rose Bengal: The role of the dendrimer structure* [\[link\]](#)
- 2023 *Fludarabine-specific molecular interactions with maltose-modified poly(propyleneimine) dendrimer enable effective cell entry of the active drug form: Comparison with clofarabin* [\[link\]](#)

## Research grants

**Principal Investigator (Leader):** 5 grants: TEAM FNP, NCN

**Coordinator:** 2 grants: 2 COST Actions

## Obtained patents

2 international patents

## International research stays

**Canada**, Hamilton, ON, McMaster University, in the team of Prof. Richard Eppard

**Spain**, Barcelona, Autonomous University of Barcelona, in the team of Dr. Josep Cladera

**Italy**, Urbino, University of Urbino, in the team of Prof. Maria Francesca Ottaviani