

IHI Call Days | Call 9

PROBarrier

● Innovative solutions for the treatment and symptom alleviation of diseases associated with gut barrier dysfunction

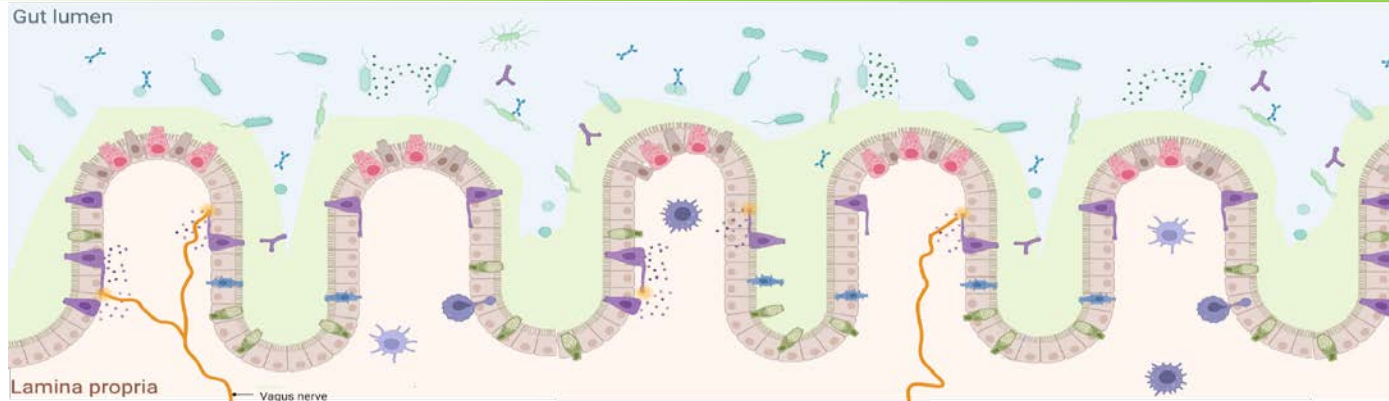
Contact person name: **Magdalena Kowalczyk (PhD, DSc)**

Organisation: Institute of Biochemistry and Biophysics PAS

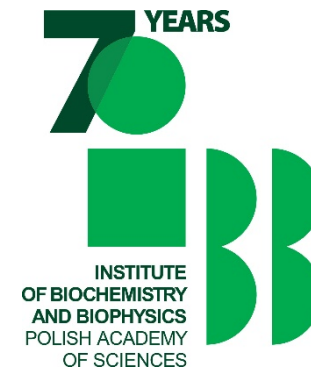
E-mail: mk@ibb.waw.pl

Link to the IHI brokerage platform: <https://tinyurl.com/26ns6f4j>

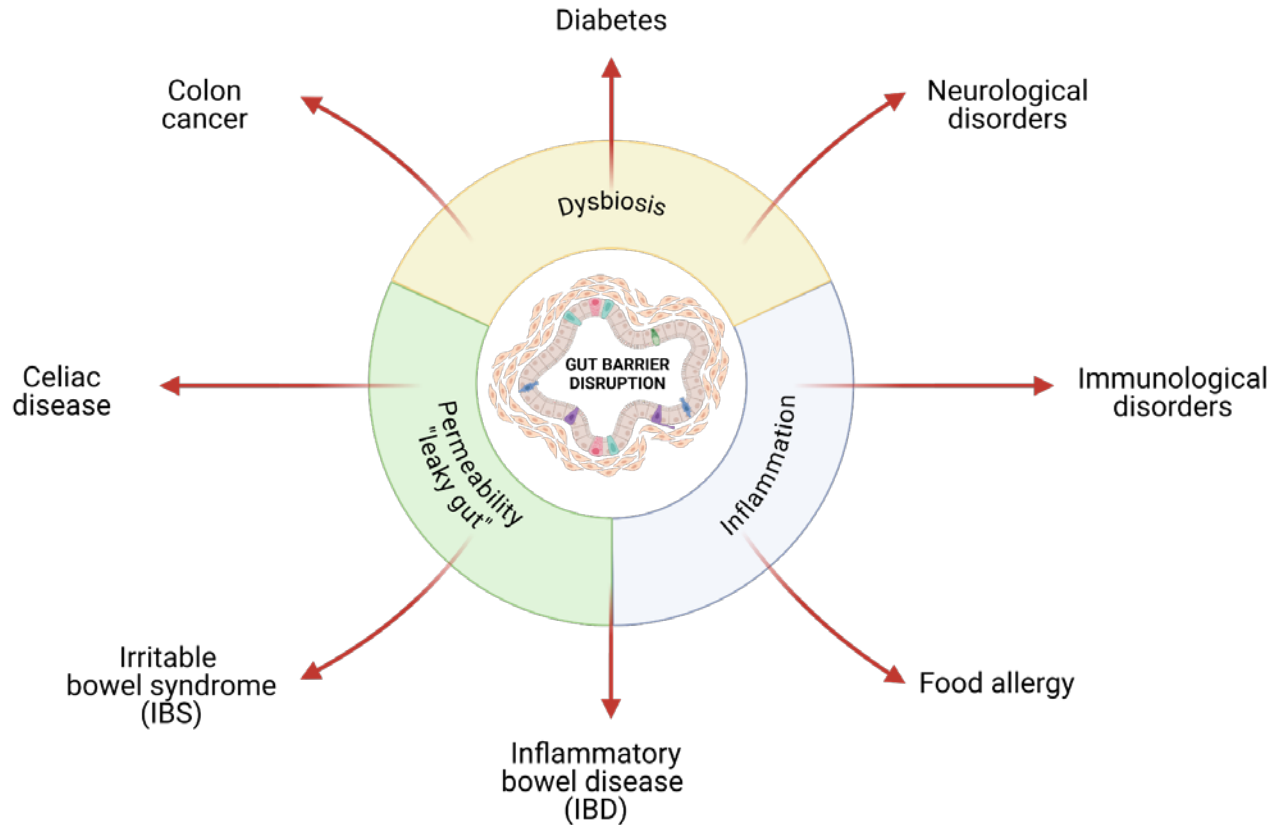
- Proposal sharing tool
- Participant profile



Created in [BioRender.com](https://www.biorender.com)



Challenges and objectives



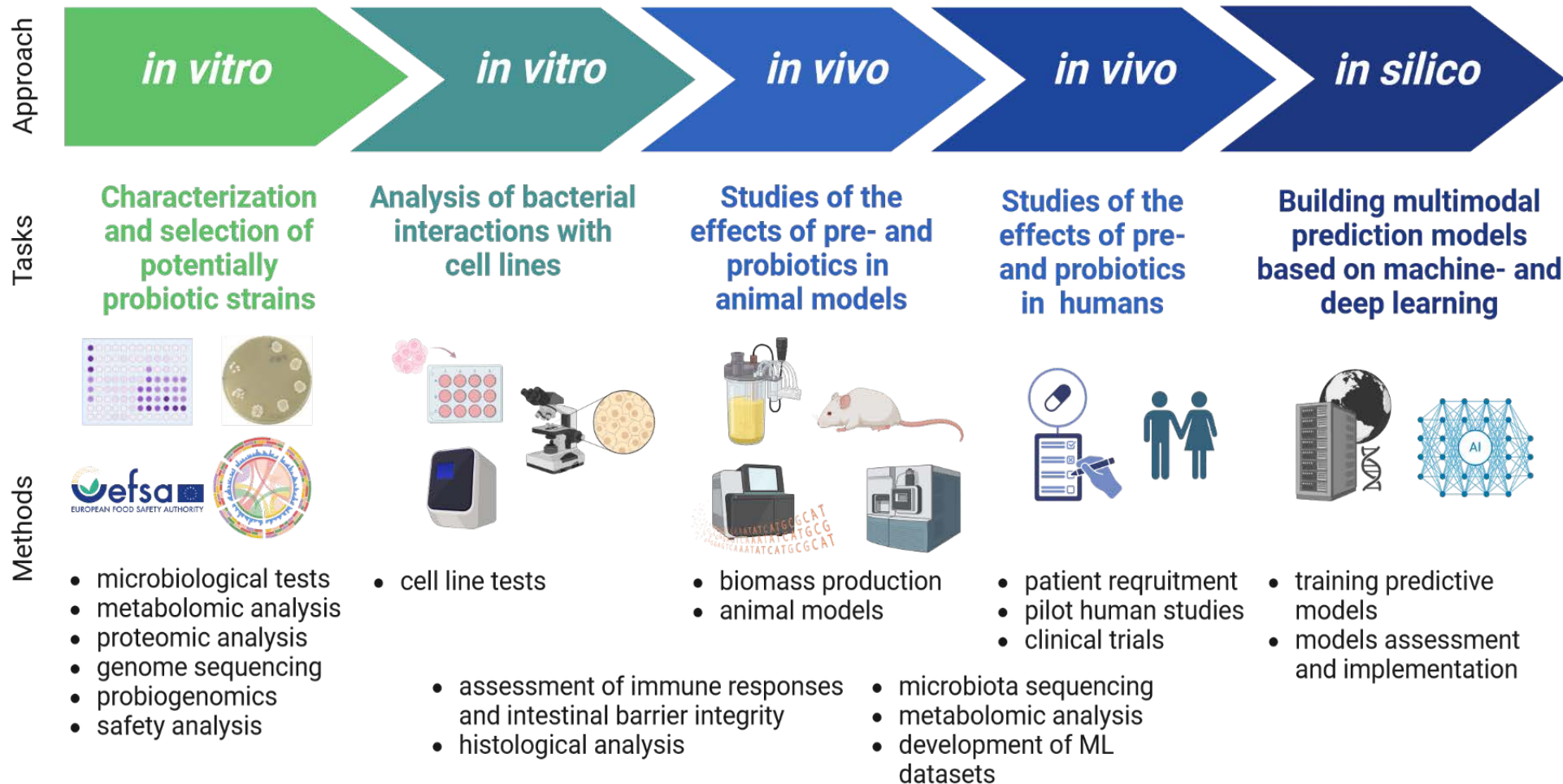
- **SO1:** better understanding of the determinants of health and priority disease areas
- **SO2:** focusing on unmet public health needs, to enable the development of tools, data and technologies for improved prediction, prevention and treatment of diseases
- **SO5:** developing new and improved models for a comprehensive assessment of pre- and probiotics

UNMET PUBLIC HEALTH NEEDS

- increasing number of problems linked to gut barrier disruption
- lack of effective therapies for people with gut barrier disorders
- poor quality dietary supplements
- limited number of well-characterized probiotic strains

Our approach to solve the problem

PROBarrier



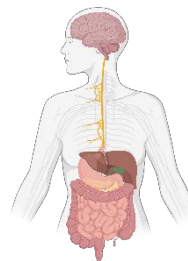
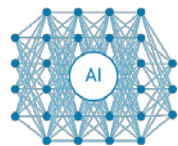
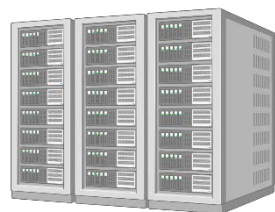
Our project is suitable for IHI

- The project will drive innovation in gut health therapies, contributing to scientific, economic, and societal impact through public-private collaboration
- This proposal seeks contributions from industry partners, including large and small pharmaceutical companies, biotech startups and tech software firms, including SME
- Industrial partners are essential for the production of prebiotics, probiotics, and dietary supplements, as well as for providing evidence based personalized medical services and IT solutions

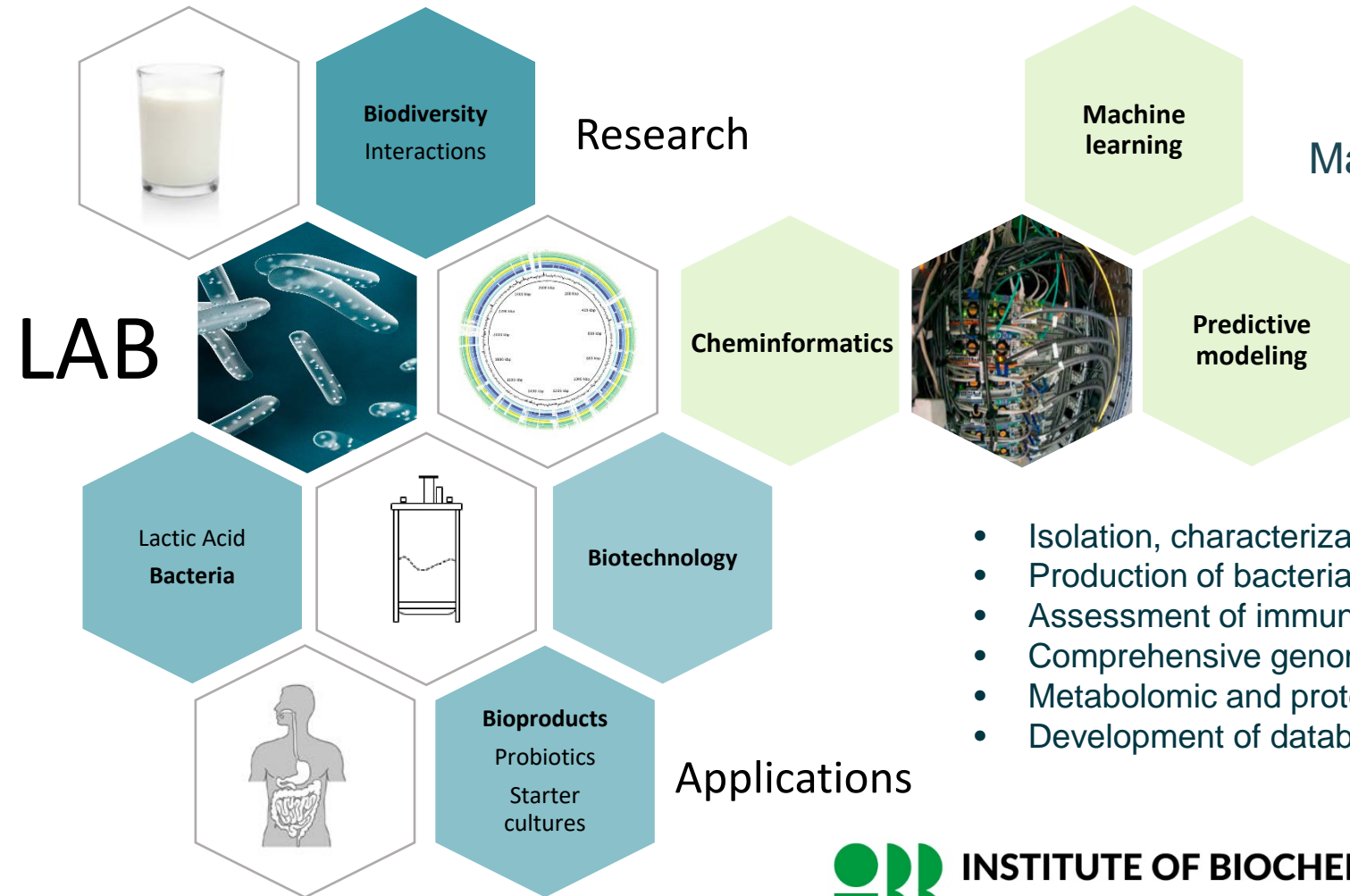


Outcomes and Impact

- **Outcome:** Innovative solutions for the protection and restoration of gut barrier function including:
 - Novel prebiotics and probiotics targeting personalized needs
 - Novel datasets on the microbiota of individuals with gut barrier disorders
 - Multimodal predictive models allowing for more precise diagnosis and treatment
- **Impact:** By restoring and maintaining gut health through a comprehensive, multidisciplinary approach, we address unmet public health needs, which are increasingly prevalent in today's societies across the EU and worldwide



Expertise and resources - **Poster !!!**



Laboratory of Lactic Acid Bacteria Biotechnology
Magdalena Kowalczyk (PhD, DSc)

Cheminformatics and Molecular Modeling Laboratory
Pawel Siedlecki (PhD, DSc)

- Isolation, characterization, and selection of natural LAB strains
- Production of bacterial biomass
- Assessment of immune responses and intestinal barrier integrity
- Comprehensive genomic sequencing, metagenomics, and probiogenomics
- Metabolomic and proteomic analyses
- Development of databases and machine-learning predictive models

Looking for:

Seeking Consortium Partners, including an experienced Coordinator

- **Academic Partners** - Experts in:
 - Traditional and next-generation probiotics
 - *In vivo* studies using suitable animal models for diseases associated with gut barrier disorders
 - Conducting multi-center studies relevant to the project's scope
- **Healthcare Practitioners and Hospitals** - Equipped with:
 - Access to patient populations for recruitment
 - Capacity for pilot human studies and clinical trials
 - Knowledge of regulatory pathways to facilitate clinical research
- **Industry Partners** (Pharma, Biotech, and AI Sectors) - Engaged in:
 - Production of prebiotics, probiotics, and dietary supplements
 - Provision of evidence based personalized IT services utilizing developed databases and predictive models
 - Business development and marketing support to ensure commercial viability and uptake