

BIOGRAPHICAL SKETCH

NAME: Maddalena Rossi

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Full Professor of Chemistry and Biotechnology of Fermentation

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
University of Bologna	M. Sc.	1988	Pharmaceutical Technology and Biotechnology
University of Bologna	Ph. D.	1994	Microbial Biotechnology

A. Personal Statement

As a Full Professor in Fermentation Chemistry and Biotechnology, my scientific work has been driven by a strong focus on uncovering novel microbial functions relevant to human and environmental health, often addressing knowledge gaps that had not been previously explored. This focus is reflected not only in the originality of the research questions but also in the measurable impact of my scientific contributions.

I have been actively engaged in research, academic leadership, and training for over three decades. Since my transfer to the University of Modena and Reggio Emilia (UNIMORE) in 2003, I have served as Head of the Industrial Microbiology and Microbial Biotechnology Group, coordinating scientific activities focused on microbial systems, fermentation processes, and biotechnological applications in health and agri-food sectors. Throughout my career, I have played a central role in mentoring early-career scientists, with the supervision of 16 Ph.D. students and numerous postdoctoral fellows, many of whom have gone on to pursue successful careers in academia and industry. My mentorship is integrated into my broader commitment to doctoral education and scientific community building, through active participation in Ph.D. programs and collaborative research environments.

I have consistently combined scientific leadership with a strong institutional presence. My professional trajectory includes key roles in academic governance, strategic research coordination, and national/international level evaluation panels. I currently serve as Chair of the Research Commission of the Department of Life Sciences and as Rector's Delegate for Biogest-Siteia within the Clust-ER "Health and Wellness Industries," reflecting my ongoing commitment to bridging academic research with innovation and industrial relevance.

Ongoing projects I would like to highlight include:

- HEAL ITALIA – Health Extended Alliance for Innovative Therapies, Advanced Lab-research, and Integrated Approaches of Precision Medicine
Role: **Task leader within SPOKE 5** (Project Code PE0000019 – CUP E93C22001860006)
National Recovery and Resilience Plan (PNRR), Mission 4 “Education and Research”,
Component 2, Investment 1.3, Funded by the European Union – NextGenerationEU (MUR Call 341/2022)
- PRIN 2022 – **PI**: Gut microbiota, milk peptides and AGEs: interplay in healthy subjects.

B. Positions, Scientific Appointments, and Honors

- **2022–Present** Chair, Research Commission, Department of Life Sciences, University of Modena and Reggio Emilia
- **2021–Present** Full Professor, CHIM/11 – Chemistry and Biotechnology of Fermentations, Department of Life Sciences, University of Modena and Reggio Emilia, Italy
- **2020–2023** Equal Opportunities Coordinator, Department of Life Sciences, University of Modena and Reggio Emilia
- **2017–Present** Rector’s Delegate for Biogest-Siteia (Clust-ER “Health and Wellness Industries”), University of Modena and Reggio Emilia
- **2017–Present** Qualified as Full Professor (1st tier) in 05/I2 – Microbiology
- **2014–Present** Qualified as Full Professor (1st tier) in 03/D1 – Pharmaceutical, Toxicological and Nutraceutical Chemistry and Technologies
- **2014–2017** President, Bachelor’s Degree in Biotechnology, University of Modena and Reggio Emilia
- **2008–2021** Associate Professor (tenured), CHIM/11 – Chemistry and Biotechnology of Fermentations, University of Modena and Reggio Emilia, Italy
- **2007–Present** Member, Ph.D. Program in Science, Technology and Biotechnology of Agri-Food Products, University of Modena and Reggio Emilia
- **2005–2008** Associate Professor, CHIM/11 – Chemistry and Biotechnology of Fermentations, University of Modena and Reggio Emilia, Italy
- **2004–2005** Assistant Professor, CHIM/11 – Chemistry and Biotechnology of Fermentations, Faculty of Biosciences and Biotechnologies, University of Modena and Reggio Emilia, Italy
- **2003–2004** Assistant Professor, CHIM/11 – Chemistry and Biotechnology of Fermentations, Faculty of Medicine, University of Modena and Reggio Emilia, Italy
- **1997–2003** Assistant Professor (tenured), Chemistry and Biotechnology of Fermentations, Faculty of Pharmacy, University of Bologna, Italy
- **1994–1997** Assistant Professor (non-tenured), Chemistry and Biotechnology of Fermentations, Faculty of Pharmacy, University of Bologna, Italy

C. Contributions to Science

Despite a relatively moderate number of publications (112 indexed articles), my work has received **5,996 citations**, with an **H-index of 40**, and a **Field-Weighted Citation Impact of 1.55**. I am first and/or corresponding author in more than half of these papers, with a clear role as PI and intellectual leader in designing and executing high-impact research. This demonstrates the relevance and timeliness of the scientific issues I have tackled, many of which have opened new directions in microbial biotechnology, host–microbe interactions, and functional food research.

The most relevant papers (**number of citations**) that support the prominence in the scientific community of intestinal microbiota are:

- Folate production by probiotic bacteria. Rossi, M., Amaretti, A., Raimondi, S. *Nutrients*, **2011**, 3(1), pp. 118–134 (502).
- Fermentation of fructooligosaccharides and inulin by bifidobacteria: A comparative study of pure and fecal cultures
- Rossi, M., Corradini, C., Amaretti, A., ...Zanoni, S., Matteuzzi, D. *Applied and Environmental Microbiology* , **2005**, 71(10), pp. 6150–6158 (451)
- In vitro transformation of chlorogenic acid by human gut microbiota. Tomas-Barberan, F., García-Villalba, R., Quartieri, A., ... Leonardi, A., Rossi, M. *Molecular Nutrition and Food Research* , **2014**, 58(5), pp. 1122–1131(158)
- Longitudinal survey of fungi in the human gut: ITS profiling, phenotyping, and colonization. Raimondi, S., Amaretti, A., Gozzoli, C., ... Rossi, M., Peppoloni, S. *Frontiers in Microbiology*, **2019**, 10, 1575 (101)
- Identification of mucin degraders of the human gut microbiota. Raimondi, S., Musmeci, E., Candeliere, F., Amaretti, A., Rossi, M. *Scientific Reports*, **2021**, 11(1), 11094. (100)
- Profiling of Protein Degradors in Cultures of Human Gut Microbiota. Amaretti, A., Gozzoli, C., Simone, M., ... Moya, A., Rossi, M. *Frontiers in Microbiology* , **2019**, 10, 2614 (86)
- Mining metagenomic whole genome sequences revealed subdominant but constant *Lactobacillus* population in the human gut microbiota. Rossi, M., Martínez-Martínez, D., Amaretti, A., ... Raimondi, S., Moya, A. *Environmental Microbiology Reports*, **2016**, 8(3), pp. 399–406 (64).
- β -Glucuronidase Pattern Predicted From Gut Metagenomes Indicates Potentially Diversified Pharmacomicrobiomics. Candeliere, F., Raimondi, S., Ranieri, R., ... Amaretti, A., Rossi, M. *Frontiers in Microbiology*, **2022**, 13, 826994. (26)
- Genomic and functional analysis of the mucinolytic species *Clostridium celatum*, *Clostridium tertium*, and *Paraclostridium bifermentans*. Candeliere, F., Musmeci, E., Sola, L., ... Raimondi, S., Rossi, M. *Frontiers in Microbiology* , **2024**, 15, 1359726 (2).