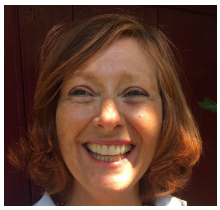

Prof. PAOLA COCCETTI
BIOS-07/A - Biochimica

Curriculum vitae

ASSOCIATE PROFESSOR
GDS 05/BIOS-07 – Biochemistry
SSD BIOS-07/A – Biochemistry
Department of Biotechnology and Biosciences
Piazza della Scienza 2, 20126
University of Milano-Bicocca, Milan
ITALY
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paola.coccetti@unimib.it
https://www.btbs.unimib.it/it/paola-coccetti
https://unimib.webex.com/meet/paola.coccetti

EDUCATION AND ACADEMIC TRAINING

2023: Attainment of the National Scientific Qualification, Full Professor BIOS-07/A Biochemistry.
2020-present: Associate Professor of Biochemistry, Department of Biotechnology and Biosciences, University of Milan-Bicocca.
1999-2020: Researcher in Biochemistry, Department of Biotechnology and Biosciences, University of Milan-Bicocca.
1996-1999: Postdoctoral Researcher, grant from the Milan Research Consortium at the Section of Comparative Biochemistry, Department of Physiology and General Biochemistry, University of Milan.
1994-1996: Postdoctoral Researcher, European Community grant within the "CEE-Biotech" project at the Section of Comparative Biochemistry, Department of Physiology and General Biochemistry, University of Milan.
1994: Short-term EMBO Fellowship, "Laboratoire de Biochimie," Ecole Polytechnique, 91128 Palaiseau Cedex, France.
1992-1994: Research Activities at "Laboratoire de Biochimie," Ecole Polytechnique, 91128 Palaiseau Cedex, France.
1989-1993: PhD in Biochemistry, Section of Comparative Biochemistry, Department of Physiology and General Biochemistry, University of Milan.
1989: Winner of a four-year ministerial scholarship for doctoral research in Biochemistry.
1989: Degree in Biological Sciences, University of Milan, Grade: 110/110 with honors.
1984: High School Diploma in Scientific Studies, Liceo Scientifico Luigi Cremona, Milan.

TEACHING ACTIVITY

Prof. Coccetti has been actively involved in teaching since 2000, initially as a permanent Researcher (2000–2019) and subsequently as an Associate Professor (2020–present).
The courses for which Prof. Coccetti has been and is responsible include:
-Cellular Biochemistry, Biochemical Methodologies and Biomolecular Technologies, Laboratory of Biochemical Technologies (Bachelor's Degree in Biotechnology).

-Functions and Dynamics of Intracellular Proteins (Bachelor's Degree in Biological Sciences).
-Cellular Biochemistry II (Master's Degree in Industrial Biotechnology).
-Biochemistry of Natural Substances and One-Health Laboratory, module on Bioactivity in Biological Models (Master's Degree in Biology)

DOCTORAL SUPERVISOR/TUTOR

- Supervisor and scientific advisor for doctoral students enrolled in the following PhD Courses: Industrial Biotechnology and Converging Technologies for Biomolecular Systems, TeCSBi, (https://www.btbs.unimib.it/en/research/doctoral-program-tecsbi/doctoral-board), University of Milano-Bicocca.

2024-present

-Hind Moukham "Investigating new functions of AMPK in the regulation of autophagy and lipophagy", (40th PhD cycle).

2023-present

-Alessia Lambiase "Characterization of plant bioactive molecules for prevention of neurodegenerative diseases", (38th PhD cycle).

2018-2020

-Riccardo Milanesi "Integrating omics data to understand energy homeostasis and global regulation of mitochondrial functionality", (34th PhD cycle).

2011-2013

-Raffaele Nicastro "Role of Snf1/AMPK as regulator of cell cycle, signal transduction and metabolism in *Saccharomyces cerevisiae*", (27th PhD cycle).

2009-2011

-Sara Busnelli "Protein kinase Snf1/AMPK: a new regulator of G1/S transition in *Saccharomyces cerevisiae*", (25th PhD cycle).

2007-2009

-Farida Tripodi "Protein kinase CK2: a major regulator of the G1/S transition in *Saccharomyces cerevisiae*", (17th PhD cycle).

2001-2003

-Flora Sternieri "The mutant Sic1S201A and Sic1S201E affected in the CK2 consensus site of the cyclin-Cdk inhibitor Sic1 exhibit an altered coordination between cell cycle progression and cell growth in *Saccharomyces cerevisiae*. (15th PhD cycle).

SCIENTIFIC SUPERVISOR FOR FUNDED RESEARCH PROJECTS

- 2024-2025

-Scientific Supervisor of Research Grant: "Analysis of natural compounds with hypolipidemic activity" awarded to Giorgia Spandri (Funded by European Community –NextGenerationEU. "On Foods - Research and Innovation Network on Food and Nutrition Sustainability, Safety and Security", Spoke 6, CUP: H43C22000820001).

2023-2024

-Scientific Supervisor of Research Grant: "New bioactive and sustainable molecules against cellular senescence and neurodegeneration" awarded to Hind Moukham (Funded by European Community – NextGenerationEU. "On Foods - Research and Innovation Network on Food and Nutrition Sustainability, Safety and Security", Spoke 6, CUP: H43C22000820001).

2022-2023

-Scientific Supervisor of Research Grant: "Regulation of cellular size in cell cycle

mutants of *Saccharomyces cerevisiae*" awarded to Hind Moukham (ID Project 2020-NAZ 0220/APER, CUP H45H20000320001).

2020-2021

-Scientific Supervisor of Research Grant:" Dissecting serine metabolism in the brain" awarded to Beatrice Badone, PRIN 2017 Project (2017H4J3AS_004, Settore ERC LS1(CUP:H45J19000470006).

2015-2019

-Scientific Supervisor of Research Grant: "Investigating the role of the energy sensor Snf1/AMPK in the control of cellular metabolism: from yeast studies to human colon cancer" awarded to Dr. Farida Tripodi (Type A Research Grant issued by the University of Milano-Bicocca. Grant duration: two years, renewable for an additional two years).

2016-2017

-Scientific Supervisor of Research Grant: "The role of Snf1/AMPK protein kinase in the regulation of glucose and amino acids metabolism in *Saccharomyces cerevisiae*" awarded to Andrea Castoldi (MIUR SysBioNet Project).

2011-2015

-Scientific Supervisor of Research Grant: " The kinase Ck2 in the regulation of mitosis in *Saccharomyces cerevisiae*" awarded to Dr. Farida Tripodi (Type A Research Grant issued by the University of Milano-Bicocca.

2008

-Scientific Supervisor of Research Grant "Systems Biology in budding yeast: the G1/S phase transition" la transizione G1/S" awarded to Matteo Viganò. Client: Finlombarda S.p.A., INGENIO Fund of the Lombardy Region, within the project: "Enhancement of Human Resources in the Field of Research and Technological Development."

-Scientific Supervisor of Research Grant "Characterization of the protein kinase Ck2 in the regulation of cell cycle in *S. cerevisiae*" awarded to Stefania Pessina. Client: Foundation Enaip of the Lombardy Region, title of thre project: "Formation/research and Orientation".

PARTICIPATION IN COMMITTEES AND RESPONSABILITY

2025

-Member of the evaluation committee for the selection process to recruit one research contract, scientific-disciplinary group GSD 05/BIOS-07, Biochemistry SSD BIOS-07/A at the Department of Biotechnology and Life Sciences, University of Insubria, Italy.

-Committee member for the doctoral dissertation of Alberto Ballin, title: "Glucose signaling through Snf1/AMPK in Saccharomyces cerevisiae: mechanistic insights from 2-deoxyglucose-resistant mutants", "Doctorat de Biologie Cellulaire et Moléculaire, École Doctorale 562 Bio Sorbonne", Paris, France.

-Member of the Evaluation Committee for the contract extension procedure of a Researcher (pursuant to Article 24, paragraph 3, letter a of Law no. 240/2010) in the scientific-disciplinary sector Biochemistry SSD BIOS-07/A at the Department of Molecular and Translational Medicine, University of Milan.

2024-present

-Responsible for Quality Assurance (AQ) of the PhD program in Converging Technologies for Biomolecular (TeCSBi, https://www.btbs.unimib.it/en/research/doctoral-program-tecsbi/doctoral-board), University of Milano-Bicocca.

-Member of the evaluation committee for the selection process to recruit one researcher in tenure track (RTT) in the academic discipline BIO/10 Biochemistry, Dipartimento di Scienze Biochimiche "A. Rossi Fanelli", University Roma La Sapienza, Italy.

-Member of the Scientific and Technical Committee for the evaluation of the technical-scientific reports of the project activities related to the PRIN 2022 PNRR call, University of Milano-Bicocca.

2023

-Member of the selection committee for the Department of Biotechnology and Biosciences for the evaluation and awarding of research collaboration grants of type A2, University of Milano-Bicocca.

2022-2023

-Chair of the selection committee for the procedures to assign curricular teaching activities at the Department of Biotechnology and Biosciences, University of Milano-Bicocca."

-Chair of the selection committee for the procedures to assign tutoring positions for the Bachelor's Degree in Biological Sciences and the Master's Degree in Industrial Biotechnology, academic year 2022/2023, Department of Biotechnology and Biosciences, University of Milano-Bicocca.

-Chair of the selection committee for the merit-based selection procedure for awarding grants to capable and deserving students of the University of Milano-Bicocca to support tutoring activities for the School of Science – Department of Biotechnology and Biosciences."

2022

-Committee member for the doctoral dissertation of Linnea Österberg, title: "Towards a comprehensive modelling framework for studying glucose repression in yeast" Department of Biology and Biological Engineering, division Systems and Synthetic Biology, Chalmers University of Technology, Gothenburg, Sweden.

-Member of the evaluation committee for the selection process to recruit one researcher (three-year employment contract pursuant to Article 24, paragraph 3, letter a, Law 240/2010), in the academic discipline BIO/10 Biochemistry, Department of Molecular and Translational Medicine, University of Brescia, Italy.

2021

-Member of the Grading Committee for the doctoral thesis of Converging Technologies for Biomolecular doctorate (TeCSBi), XXXIV PdD cycle, University of Milano-Bicocca, Italy.

-Member of the evaluation committee for the selection process to recruit one researcher (three-year employment contract pursuant to Article 24, paragraph 3, letter a, Law 240/2010), in the academic discipline BIO/10 Biochemistry, Department of Medical Biotechnology and Translational Medicine, University of Milan, Italy.

2018

-Member of the Grading Committee for the doctoral thesis of Molecular and Cellular Biology Doctorate, University of Milan, Italy (30th PhD cycle).

-Member of the Grading Committee for the doctoral thesis of Biochemistry Doctorate, University of Milan, Italy (31st PhD cycle).

2011

-Member of the Admission Examination Committee for the Industrial Biotechnology Doctorate University of Milano-Bicocca, Italy (27th PhD cycle).

2006

-Member of the Admission Examination Committee for the Industrial Biotechnology Doctorate University of Milano-Bicocca, Italy (22nd PhD cycle).

-Member of the Admission Examination Committee for the Biomolecular Sciences and Biotechnology doctorate, University of Pavia, Italy (22nd PhD cycle).

-Member of the Grading Committee for the doctoral thesis of Genetic and Biomolecular Sciences Doctorate Admission Examination Committee for the Biomolecular Sciences and Biotechnology doctorate, University of Milan, Italy (19th PhD cycle).

DOCTORAL BOARD

- **2021-present**

-Doctoral Board of the PhD Course in Converging Technologies for Biomolecular doctorate (TeCSBi), Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy (37th-41th PhD cycles, https://www.btbs.unimib.it/en/research/doctoral-program-tecsbi/doctoral-board).

2017-2021

-Member of the extended board of PhD supervisors, PhD Course in Converging Technologies for Biomolecular doctorate (TeCSBi), Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy.

2016-2018

-Doctoral Board of the PhD Course in "Biology and Biotechnology", Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy (32th PhD cycle)

2015-2017

-Doctoral Board of the PhD Course in "Biology and Biotechnology", Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy (31st PhD cycle)

2014-2016

-Doctoral Board of the PhD Course in "Biology and Biotechnology", Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy (30th PhD cycle)

2013-2015

-Doctoral Board of the PhD Course in "Life Science", Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy (29th PhD cycle)

2006-2012

-Doctoral Board of the PhD Course in "Industrial Biotechnology", Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy (22nd-28th PhD cycles)

REVIEWER OF PhD THESIS, PROJECTS AND PAPERS

- **2025**

- Reviewer of Edoardo Giuseppe Di Leo's doctoral thesis, title: "Screening of Italian Flora: identification, bioavailability, and intracellular antioxidant activity of novel secondary metabolites". "PhD Course in Clinical and Experimental Biomedical Sciences, Department of Medicine, University of Verona, Italy (38th PhD cycle).

-Reviewer of Alberto Ballin's doctoral thesis, title: "Glucose signaling through Snf1/AMPK in *Saccharomyces cerevisiae* : mechanistic insights from 2-deoxyglucose-resistant mutants". "Doctorat de Biologie Cellulaire et Moléculaire, École Doctorale 562 Bio Sorbonne", Parigi

2024

-Reviewer of Silvia Breviario's doctoral thesis, title: "Dissecting the role of acid sphingomyelinase inhibition in Gaucher disease and GBA-dependent Parkinson's disease in vitro models" PhD Programme in Translational Medicine, Department of Biomedical Science, University of Milan, Italy (36th PhD cycle).

2022

-Reviewer of Linnea Österberg's doctoral thesis, title "Towards a comprehensive modelling framework for studying glucose repression in yeast" Department of Biology and Biological Engineering, division Systems and Synthetic Biology, Chalmers University of Technology, Gothenburg, Sweden.

2020

-Reviewer of the project "Understanding how regulation of gene expression by nutrient signalling shapes the molecular pathways of ageing" for Babraham Institute, Cambridge (Grant Reference: BB/V001337/1).
-PhD thesis reviewer of Claudia Capusonis doctoral thesis, title "Application of non-conventional yeasts in bioprocesses" PhD Programme in Food Systems (32th PhD cycle), Department of Food, Environmental and Nutritional Sciences (DeFENS), University of Milan, Italy.

2016-present

-Registered in REPRISE (Register of Experts for Research Assessment) for Basic Research (appointed by the Italian Ministry of University and Research, MUR).

2015

-Reviewer of the Italian Ministry of University and Research for VQR 2011-2014 evaluation, GEV 05 and GEV 06.

2013

-Reviewer of the Italian Ministry of University and Research for "Futuro in Ricerca 2013".

2012-2015

-Reviewer appointed by the University of Verona (Italy) for the evaluation of joint research projects with companies (Joint Projects 2012 e 2015).

2010

-Reviewer of the Italian Ministry of University and Research for "Futuro in Ricerca 2010".

2011

-Reviewer of the Italian Ministry of University and Research for VQR 2004-2010 evaluation, GEV 05 and GEV 06.

2000-present

-Reviewer for the following journals:
Oncogene, Cellular and Molecular Biology Letters, Molecular Biosystems, Medicinal Chemistry Communication, BMC Cancer, European Journal of Medicinal Chemistry, Biochimica et Biophysica Acta - General Subjects, Current Genetics, FEMS Yeast Research, FEMS Microbiology Letters, Yeast, Molecular and Cellular Biochemistry, Current Bioactive Compounds, Cell Systems, Molecules, OMICS, Molecular OMICS, iScience, Computers in Biology and Medicine, Microbial Cell, Biotechnology Advences, Plos Genetics, BioFactors, Computational and Structural Biotechnology Journal, Life Sciences, NeuroToxicology, Proceedings of the National Academy of Sciences (PNAS), Redox Biology, Cell Reports, Journal of Pharmaceutical Analysis.

EDITORIAL ACTIVITIES AND MEMBER OF SCIENTIFIC SOCIETIES

2024-present

-Board Member of Nutrients, MDPI
(https://www.mdpi.com/journal/nutrients/editors?search=Paola+Coccetti).
-Guest Editor for Nutrients, Special number "Bioactive Ingredients in Plants Related to Human Health" (https://www.mdpi.com/journal/nutrients/special_issues/UE42WUB1A1).

2022-present

-Associate Editor for Molecular Diagnostic and Therapeutics, Frontiers in Molecular Biosciences
-Review Editor for Protein Biochemistry for Basic and Applied Sciences, Frontiers in Molecular Biosciences.
https://www.frontiersin.org/journals/molecular-biosciences/editors.
https://loop.frontiersin.org/people/148958/overview

2017-present

-Academic Editor of Microbial Cell, session: "Cell Physiology and Cell Signaling" (https://microbialcell.com).

-2017 Member of Transautophagy (CA15138, Cost European Cooperation in Science and Technology).

2013-2017

-Editorial Member of Dataset Papers in Science: Cell Biology, Hindawi Publishing Corporation, peer-reviewed, Open Access journal.

2007-present

-Ordinary Member of the Italian Society of Biochemistry and Molecular Biology Soci (SIB), (https://sib-biochemistry.it).

AWARDS and RECOGNITIONS

2025

-Best Paper Award, Second Prize, in recognition of the paper entitled "Industrial Production of Proteins with *Pichia pastoris-Komagataella phaffii*" Biomolecules 2023, 13(3), 441; Biomolecules 2023, 13(3), 441; https://doi.org/10.3390/biom13030441.

-Certificate of positive evaluation pursuant to the "Regulations on self-certification and verification of actual teaching, student service, and research activities pursuant to Article 6, paragraphs 7 and 8, of Law 240/2010" (Prot. No. 0033391 of 21/01/2025), University of Milano-Bicocca.

2024

-Salary increase awarded for the 2022–2023 biennium following a positive evaluation by the Academic Senate, University of Milano-Bicocca, for research activities (2022–2023) and teaching activities (academic years 2021–2022 and 2022–2023).

-Certificate of positive evaluation pursuant to the "Regulations on self-certification and verification of actual teaching, student service, and research activities pursuant to Article 6, paragraphs 7 and 8, of Law 240/2010" (Prot. No. 0005949 of 10/01/2024), University of Milano-Bicocca.

2023

-Awarded National Scientific Qualification as Full Professor in BIOS-07/A Biochemistry.

-Article published in *The FEBS Journal* selected for the cover of the issue: Tripodi et al., "Serine metabolism during differentiation of human iPSC-derived astrocytes". doi:10.1111/febs.16816. P. Coccetti is also the corresponding author of the paper.

-Interview on the "Anti-aging properties of mushrooms" published in *Bnews*, University of Milano-Bicocca (https://bnews.unimib.it/blog/le-proprietà-anti-età-dei-funghi/).

2022

-Certificate of positive evaluation pursuant to the "Regulations on self-certification and verification of actual teaching, student service, and research activities pursuant to Article 6, paragraphs 7 and 8, of Law 240/2010" (Prot. No. 0111536 of 27/09/2022), University of Milano-Bicocca.

-Salary increase awarded for the 2020–2021 biennium following a positive evaluation by the Academic Senate, University of Milano-Bicocca, for research activities (2020–2021) and teaching activities (academic years 2019–2020 and 2020–2021).

2021

-Certificate of positive evaluation pursuant to the "Regulations on self-certification and verification of actual teaching, student service, and research activities pursuant to Article 6, paragraphs 7 and 8, of Law 240/2010" (Prot. No. 0006745/21 of 19/01/2021), University of Milano-Bicocca.

2020

-Research product evaluation (VQR 2015–2019), 3 products evaluated: 1 rated as excellent

and highly relevant, and 2 rated as excellent.

2019

-Recipient of one-time merit-based incentive (2013–2015) for academic and scientific excellence (D.R. 17495, 8 February 2019), University of Milano-Bicocca.

2015

-Article published in *Molecular Biosystems* selected for the cover of the issue: Airoldi et al., "NMR analysis of budding yeast metabolomics: a rapid method for sample preparation", *Molecular Biosystems*, Volume 11, February 2015. P. Coccetti is also the corresponding author.

-Research product evaluation (VQR 2011–2014), 3 products evaluated: 2 rated as excellent and 1 as high quality.

2014

-Awarded National Scientific Qualification as Associate Professor for the sector 05/F1 Applied Biology.

2012

-Recipient of one-time merit-based incentive (2009–2011) for academic and scientific excellence (D.R. 13786, 12 September 2014), University of Milano-Bicocca.

RESEARCH FUNDINGS

2026-2029

-HORIZON-MSCA-2024-DN-01, research title: "Understanding and Postponing Yeast Death to Improve Production (UPsYDE, proposal number 1011227210)", PI of Milano-Bicocca Research Unit: COCCETTI, 281.775 euro, https://cordis.europa.eu/project/id/101227210.

2022-2025

-Research title: "Identification of bioactive molecules extracted from plants with anti-aging, anti-inflammatory and neuroprotective properties", funded by the European Union—NextGenerationEU; Award Number: Project code CN_00000033, Concession Decree No. 1034 of 17 June 2022. Adopted by the Italian Ministry of University and Research, CUP, H43C22000530001, Spoke 6, Project title "National Biodiversity Future Center—NBFC", Biodiversity and human wellbeing, CUP: H43C22000530001, 2022-NAZ-0450/COCCETTI, 444.841,00 euro.

- Research title: "ON Foods - Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods", - Research and Innovation Network on Food and Nutrition Sustainability, Safety and Security", Spoke 6– NextGenerationEU), CUP: H43C22000820001, 2022-NAZ-0456/COCCETTI, 169.475,00 euro.

2019-2023

-Project: PRIN 2017 (2017H4J3AS_004, Settore ERC LS1, Coordinator: Prof. Loredano Pollegioni), title of the project: "Dissecting serin metabolism in the brain", CUP:H45J19000470006, PI of Milano-Bicocca Research Unit: COCCETTI, 157.000 euro.

2017-2021

-Project "Food Systems and Sustainable Development, creating synergies between international and African research program and process" (SASS, CUP: H42F16002450001, Coordinator: Prof. Massimo Labra), Research Unit coordinated by COCCETTI, 150.000 euro.

2017

-FFABBR_NAT– National funding from the Italian Ministery of Research (MIUR).

2008-2015

-Member of Research Program UNICELLSYS 12-4160, EU-funded Coordination Action yeast Systems Biology Network, Coordinator Prof. Lilia Alberghina (http://www.unicellsys.eu).

2008-present

Scientific referent of ATE Research Programs from University Milano-Bicocca.

2006-2008

-Participant in the PRIN Research Program, Scientific Coordinator: Prof. Marco Vanoni, Project Title: "Cell cycle progression and cell death in *Saccharomyces cerevisiae*: the role of nutrients and protein kinase CK2."

2002-2004

-Participant in the PRIN Research Program, Scientific Coordinator: Prof. Antonio De Flora, Scientific Supervisor: Prof. Marco Vanoni, Project Title: "Integrative and comparative analysis of the calcium-dependent modulation of transcriptome, proteome and cell cycle progression in yeast and mammalian cells"

2000-2002

Participant in the PRIN Research Program, Scientific Coordinator: Prof. Antonio De Flora, Scientific Supervisor: Prof. Lilia Alberghina, Project Title: "Effect of high intracellular calcium levels on the regulation of cell proliferation and gene expression in mammalian fibroblasts."

ORGANIZER, CHAIR AND COMMITTEE OF SCIENTIFIC CONFERENCES

2025

-Scientific Committee of the National Forum of Biodiversity, 19-22 May University of Milano-Bicocca (https://forumnbfc2025.it/).

-Organizer of the Joint Meeting of the SIB Groups: Nutrition and Environment, & Membranes. "Nutrition, Environment, and Biomembranes: Interactions and Emerging Perspectives", University of Bologna, 27-29 May 2025 (https://eventi.unibo.it/riunione-congiunta-sib).

-Chair of the session: "Nutraceuticals and neurodegeneration". Joint Meeting of the SIB Groups: Nutrition and Environment, & Membranes. "Nutrition, Environment, and Biomembranes: Interactions and Emerging Perspectives", University of Bologna, 27-29 May 2025 (https://eventi.unibo.it/riunione-congiunta-sib).

2023

-Organizer of the Congress: 7th Meeting of Young Biochemists in Lombardy, Università degli Studi di Brescia, Brescia, Italia (https://sib-biochemistry.it/wp-content/uploads/2020/03/Scientific-Program-7MeetingYoungBiochemistsinLombardy.pdf).

2022

-Organizer of the Congress: 6th Meeting of Young Biochemists in Lombardy, University of Milano (https://apps.unimi.it/web/eventi/resources/external/uploaded/7224_2315.pdf).

2021

-Chair of the session "Regulatory elements in signalling and networks" 61° SIB Congress 23-24 September.

2019

-Organizer of the Congress "Women in Sciences - Le Scienze con la D maiuscola", University of Milano-Bicocca.

2019-present

-Scientific Committee "Centro Interdipartimentale per gli Studi di Genere", University Milano-Bicocca (https://abcd.unimib.it/il-centro/gli-organi-del-centro/)

ORAL PRESENTATION IN NATIONAL CONFERENCES

2025

-Title: "Protective role of verbascoside against misfolding and aggregation of alfa-synuclein associated with Parkinson's disease". National Forum of Biodiversity, 19-22 May, University of Milano-Bicocca.

2023

-Title: "Multiomic analyses pinpoint distinct metabolic pathways during differentiationof hiPSC-derived astrocytes", Congress: "Bioprosys Joint Meeting: from basic understanding of cell networks to their modulation and engineering for health and industrial applications", SIB Workshop, 18-19 May, University Luigi Vanvitelli, Napoli, Italy.

2017

-Title: "Proteomics and integrative omic approaches for understanding the control of energy homeostasis", SIB Workshop on "Computational and Systems Biology", University of Bologna, Italy.

2016

-Title: "Methionine metabolism imbalance in AMPK-deficient yeast models" (Session: Nutrition Biochemistry), "XIV FISV Congress (Italian Federation of Life Sciences), 20-23 September, University La Sapienza Roma, Italy

2015

-Title: "Glucose and amino acids addiction is a typical hallmark of Snf1/AMPK-deficient cells" (Symposium: Metabolism and Computational Biology), 58th National Meeting of the Italian Society of Biochemistry and Molecular Biology, 14-16 September, University of Urbino, Italy

ORAL PRESENTATION IN INTERNATIONAL CONFERENCES

2025

-Title: "Targeting protein aggregation using a cocoa-bean shell extract to reduce α-synuclein toxicity in models of Parkinson's disease", 11th International Conference on Food Chemistry and Technologies (https://food.unitedscientificgroup.org/speakers), FTC2025, 15-17 October, Rome.

-Title: "Protective role of verbascoside against misfolding and aggregation of alfa-synuclein associated with Parkinson's disease". ProLyon2025 (European Biophysics Society Association-EBSA-Satellite Symposium, Proteins and lipids in neurodegenerative diseases Insights from in vitro and in vivo models) (https://sites.google.com/uniroma1.it/prolyon2025/program?authuser=0), 4-5 June, Sapienza University of Rome.

2024

-Title: "Snf1/AMPK in budding yeast: a kinase with several functions", 6th European Workshop on AMPK, 29/9-2/10 2024, Domaine Saint Joseph Lyon, France.

-Title: "Beans and Mushrooms extracts: functional food with anti-aging and neuroprotective properties", 6th World Ageing and Rejuvenation Conference, 8-10 July 2024, Paris, France.

2021

-Title: "Neuroprotective Properties of Extracts from *G. frondosa* and *H. erinaceus* in models of neurodegeneration" (Session: Dietary supplements, nutraceuticals, and functional foods in neuroprotection), "2nd International Conference on Neuroprotection by Drugs, Virtual edition.

2019

-Title: "Neuroprotective Properties of Standardized Extracts from *Vigna unguiculata* in yeast models of neurodegeneration", 1st International Conference on Neuroprotection by Drugs, Nutraceuticals and Physical Activity (Session: Neuroprotection by Nutraceuticals). Rimini 6-7 June 2019, Rimini, Italy.

2017

-Title: "Snf1/AMPK regulates metabolism and autophagy in a methionine-dependent manner" (Session: Autophagy/Mitophagy), 12th International Meeting on Yeast Apoptosis", 14-18 May 2017 Bari, Italy.

2016

-Title: "Snf1/AMPK in budding yeast: not only a guardian of energy homeostasis in nutritional deprivation", invited by Prof. Jean Marie Francois at the "Institute National des Sciences Appliquèes", PhD Seminar, Toulouse, France.

2015

-Title: "Glucose and amino acids addiction is a typical hallmark of Snf1/AMPK deficient cells", 27th International Conference on Yeast Genetics and Molecular Biology, (Symposium W4: Growth Control and Metabolism), Levico Terme, 6-12 September 2015, Italy.

2013

-Title: "Protein kinase Snf1/AMPK: a new regulator of G1/S transition in *Saccharomyces* cerevisiae", Conference of the European Project UNICELLSYS, Innsbruck, Austria.

2010

-Title: "CK2 is modulated by nutritional conditions in budding yeast" (Session E: CK2 in yeasts, plants, and non-vertebrate animals), "6th International Conference on Protein Kinase CK2, University di Cologne, 7-10 September 2010, Cologne, Germany.

RESEARCH OVERVIEW

The research activity focuses on elucidating the molecular mechanisms that regulate cell growth, metabolism and longevity with particular emphasis on understanding their dysfunctions associated with human diseases in unicellular and multicellular cellular systems. The main research topics are outlined below, some of which are currently ongoing:

Understanding and Postponing Yeast Death to Improve Production

The yeast Saccharomyces cerevisiae is used in microbial biotechnology to produce various compounds, ranging from ethanol as a biofuel to insulin to treat diabetes. It is furthermore widely used as model organism to study eukaryotic biology, for example mechanisms involved in aging, the cell cycle and regulated cell death. In context of industrial processes, cells must remain alive and producing in order to have longer fermentation processes. Loss of viability is however often observed, which has a strong negative impact on product yield, product quality and production rates. A key-challenge therefore lies in postponing cell death under industrial conditions for as long as possible. In this project, in which seven host institutes (Wageningen Universiteit, Universidade do Minho, Danmarks Tekniske Universitet, Austrian Centre for Industrial Biotechnology, Imperial College London, Università degli Studi di Milano Bicocca and Chalmers Tekniska Högskola) together with fifteen associated partners are involved, we aim to identify specific functions in nutrient sensing to improve yeast survival and longevity and to manipulate selected nutrient and other signaling pathways to obtain strains of different yeast species with modified cell death and senescence profiles under industrial bioprocess conditions. This knowledge will be used to improve the bioproduction of chemicals.

(Research project, 2026-2029: HORIZON-MSCA-2024-DN-01, UPsYDE, proposal number 1011227210 https://cordis.europa.eu/project/id/101227210)

Metabolic Regulation and AMPK Functions

The kinase AMPK (AMP-activated protein kinase) is the master regulator of cellular energy homeostasis. Although its role in responding to energy-deprivation conditions is well established, we have identified previously unrecognized functions of the complex Snf1/AMPK in the absence of nutritional stress in yeast. Specifically, Snf1/AMPK regulates cell-cycle progression by ensuring proper expression of G1 genes and, during mitosis, the correct orientation of the mitotic spindle

(DOI: 10.4161/cc.9.11.11847; DOI: 10.1016/j.bbamcr.2013.09.014; DOI: 10.1038/s41598-018-24252-y).
Other important functions concern its role in regulating the two major signaling pathways controlling growth, proliferation, and metabolism, namely PKA and TORC1. Indeed, Snf1 phosphorylates both adenylate cyclase, by negatively regulating PKA pathway, and the TORC1 effectors Sch9 and Pib2, by maintaining TORC1 in an inactive state during glucose starvation (in collaboration with Prof. Claudio de Virgilio, University od Fribourgh). (DOI: 10.1074/jbc.M115.658005; DOI: 10.7554/eLife.84319).
In yeast, Ras/PKA and Snf1/AMPK pathways regulate cellular metabolism according to the supply of glucose, alternatively supporting fermentation or mitochondrial respiration. Our studies showed that Snf1/AMPK senses glucose flux (through the metabolite glucose-6-phosphate, G6P), independently from PKA, which is known to support fermentation (DOI: 10.3390/ijms22179483).
A novel feedback mechanism regulating Snf1/AMPK activity is currently under investigation. In particular, we are studying its nuclear enrichment upon glucose depletion and as a function of cell cycle progression and its upstream activating kinases.
(Research Program UNICELLSYS 12-4160, EU-funded Coordination Action yeast Systems Biology Network, http://www.unicellsys.eu).

Plant-Derived Bioactive Compounds against Neurodegeneration and Lipid Dysmetabolism
As part of the National Biodiversity Future Centre initiative (https://www.nbfc.it/en) research focused on the effects of plant-derived bioactive compounds on aging, protein aggregation associated with neurodegeneration, and lipid metabolism modulation, aiming to identify beneficial molecules and uncover their cellular and molecular mechanisms (DOI: 10.1016/j.neurot.2025.e00825; DOI: 10.1016/j.crfs.2024.100888; DOI: 10.3390/nu16091298; DOI: 10.3390/antiox13010093; DOI: 10.3390/nu14204368; DOI: 10.18632/aging.104069).
(Research Projects, 2023-2025: 1) "Identification of bioactive molecules extracted from plants with anti-aging, anti-inflammatory and neuroprotective properties", funded by the European Union—NextGenerationEU; "National Biodiversity Future Center, NBFC", Spoke 6; 2) "ON Foods - Research and innovation network on food and nutrition Sustainability, Safety and Security - Working ON Foods", Research and Innovation Network on Food and Nutrition Sustainability, Safety and Security, Spoke 6, NextGenerationEU).

Metabolic Alterations in Alzheimer's Disease
Post-mortem hippocampal samples from male and female cohorts affected by Alzheimer's disease (AD), revealed significant differences in metabolic pathways between control and AD groups, with notable sex-specific variations. Specifically, serine metabolism was strongly modulated, suggesting distinct pathophysiological mechanisms in males and females. Using hiPSC-derived astrocytes and neurons, we are exploring the role of serine metabolism during astrocyte and neuron differentiation to develop robust cellular models for studying neurodegenerative diseases, with potential applications in therapeutic development (DOI: 10.1016/j.celrep.2022.111271; DOI: 10.1111/febs.16816; DOI: 10.3389/fncel.2025.1616911).
(Research Project, from 2019: PRIN 2017 (2017H4J3AS_004, "Dissecting serin metabolism in the brain").

Mechanism of Action of Bovericin in Fungal Infections
In collaboration with Prof. Leah Cowen (University of Toronto), we identified the mechanism of action of the natural compound bovericin, used in the treatment of pathogenic fungal infections. Bovericin inhibits the Pdr5 transporter and suppresses TORC1 activity, leading to downstream inhibition of CK2

kinase and the Hsp90 chaperone, both involved in drug resistance mechanisms (DOI: 10.1038/nchembio.2165; DOI: 10.1074/jbc.M117.807032).

Novel Antitumor Compounds in Colorectal Cancer

In collaboration with Dr. Milo Frattini (Institute of Pathology, Locarno, Switzerland), we demonstrated the antitumor and pro-apoptotic effects of newly synthesized molecules derived from Combretastatin and Resveratrol in colorectal cancer (CRC) cell lines. These compounds exhibit a robust AMPK-dependent antiproliferative and apoptotic effect, also confirmed in CRC xenograft mouse models, paving the way for a new class of potential therapeutic agents (DOI: 10.1021/jm201344a; DOI: 10.1007/s10637-014-0148-8; DOI: 10.1039/c8md00147b).

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PATENT

- 2013

Pagliarin R, Orsini F, Montano G, Tripodi F, Coccetti P, Fusi P. "1,4-Diaryl-2-Azetidinones with antitumoral activity". International Publication Number WO 2013/017548 A1.

BOOK AUTHORSHIP

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PUBLICATIONS

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Milan, 7-1-2026

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