

# Mara Colzani, PhD



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**EXPERTISE** Proteomics and mass spectrometry applied to pharmaceutical analyses

## EDUCATION

2010 **Doctor of Philosophy 'Ph.D.' in Life Sciences** EQF level 8

University Université de Lausanne, Switzerland

Thesis title Development of metabolic labeling strategies to study changes in protein expression

2005 **Master degree in Biotechnology** EQF level 7

University Università di Milano - Bicocca, Italy

Thesis title Plasma proteomics: method development for biomarkers characterization in toxicology

## PROFESSIONAL EXPERIENCE

2012 - present **Research fellow (Post Doc)**

*Dept. of Pharmaceutical Sciences, Università degli Studi di Milano, Milano*

- Biochemical, mass spectrometry and proteomic analyses
- Main project: analysis of protein modification by reactive carbonyl species
- Trainer of students during thesis internship

2010 - 2012 **Research fellow (Post Doc)**

*Dept. of Experimental Oncology, Istituto Oncologico Europeo (IEO), Milano and  
Center of Genomic Science, Istituto Italiano di Tecnologia (IIT@SEMM), Milano*

- Chemical proteomics, quantitative proteomics, analysis of histones modifications
- Speaker at the "YouScientist" cycle conference from IFOM, for high school students. Title: "Proteomics: large-scale protein analysis", 2011 and 2012

2006 - 2010 **Ph.D. student and research assistant**

*Center for Integrative Genomics, Université de Lausanne, Lausanne (CH)*

Development of new strategy based stable isotopes for quantitative proteomics, applied to different studies based on model cell

2005 - 2006 **Graduate research fellow**

*Pre-Clinical Dept., Nerviano Medical Sciences Srl (ex Pfizer Inc.), Nerviano (IT)*

Biochemical analyses

2003 - 2005 **Master thesis internship**

*Pre-Clinical and Biotechnology Departments, Pfizer Inc., Nerviano (IT)*

2D-gel proteomics, MALDI-TOF mass spectrometry and general biochemistry

June - September 2003 **Laboratory experience as Socrates fellow**

*Biotechnology dept., Rheinisch-Westfälische Technische Hochschule, Aachen (DE)*

Expression and characterization of a human enzyme in *E. coli*

**TECHNICAL SKILLS** Excellent knowledge of mass spectrometry, biochemistry and proteomics techniques and related bioinformatics tools.  
Good knowledge of cell culture and metabolic labelling with stable isotopes.

## SELECTED AWARDS

- 2015 **1<sup>st</sup> prize Young Proteomics Investigator** awarded by EuPA (European Proteomics Association)
- 2015 Poster selected for the “Emerging leaders in nutrition science poster competition” at the Experimental Biology meeting in Boston
- 2009 4<sup>th</sup> poster prize at the National Conference of the Italian Proteomics Association (ItPA)
- 2008 Grant from Swiss Proteomics Society (SPS) to attend the 8<sup>th</sup> Siena Meeting

## SUMMARY OF SCIENTIFIC PRODUCTION

- 13 papers on peer-reviewed journals
  - 3 book chapters
  - 3 patent requests
  - Participation to at least 20 international meetings, with posters or oral talks
- List of scientific papers: [https://www.researchgate.net/profile/Mara\\_Colzani/contributions](https://www.researchgate.net/profile/Mara_Colzani/contributions)

## SELECTED PAPERS

- Colzani M** et al. “Reactivity, selectivity and reaction mechanisms of aminoguanidine, hydralazine, pyridoxamine and carnosine as reactive carbonyl species sequestering agents: a comparative study”. *ChemMedChem*, 2016
- Colzani M** et al. “A novel high resolution MS approach for the screening of 4-hydroxy-trans-2-nonenal sequestering agents”. *J Pharm Biomed Anal.* 2014
- Colzani M** et al. “Quantitative chemical proteomics identifies novel targets of the anti-cancer multi-kinase inhibitor E-3810”. *Mol Cell Proteomics.* 2014
- Colzani M** et al. “Relative protein quantification by isobaric SILAC with immonium ion splitting (ISIS).” *Mol Cell Proteomics.* 2008

## SELECTED CONGRESSES

- “Analysis of oxysterols-mediated antiviral activity by quantitative proteomics”. Short **oral presentation** selected for the Young Proteomics Investigator prize at the *IX Annual Congress of the European Proteomics Association (EuPA)*, Milano (Italy) 2015
- “Screening and characterization of protein carbonyl-quenching activities by high resolution mass spectrometry”. Selected **oral presentation**, *HNE club satellite meeting of the Society for Free Radical Research-Europe (SFRR-E)*, Toulouse (FR) 2014
- “Quantification of proteins and oxidative post-translational modifications”. **Invited lecturer** at the workshop *Mass spectrometry analysis of protein oxidation*, Aston University, Birmingham (UK) 2013
- “A chemical proteomic approach in antimalarial drugs discovery”. Poster at the *XXII National Meeting on Medicinal Chemistry*, Roma (Italy) 2013
- “Interaction profiling of a multi-kinase inhibitor by SILAC-based chemical proteomics”. Poster presented at *HUPO - 10th world congress*, Geneva (Switzerland) 2011
- “Analysis of proteins secreted by cultured cells in serum-containing media”. Poster presented at the *National conference of the 4<sup>th</sup> Italian Proteomics Association - ItPA*, Milano (Italy) 2009
- “Novel SILAC strategies for unconventional applications: protein secretion and protein synthesis rates”. Selected **oral presentation** at *8<sup>th</sup> Siena Meeting - From Genome to Proteome*, Siena (Italy) 2008
- “Marrying iTRAQ and SILAC: relative protein quantification by isobaric SILAC with immonium ion splitting (ISIS)” Poster presented at *HUPO - 6<sup>th</sup> world congress* Seoul (Korea) 2007

## GRANT WRITING

- Cariplo “Biomedical research by young researchers 2015” as PI. Mark: B (rank: A-C)
- “Scientific Independence of young Researchers 2014” as PI. Mark: good
- “Futuro in Ricerca 2013” as unit responsible. Mark: 8/10