

CURRICULUM VITAE

MARINA CARINI

Full Professor

Medicinal Chemistry

Department of Pharmaceutical Sciences



PRESENT POSITION

- Full Professor in Medicinal Chemistry, University of Milan (UNIMI)
- Vice Director of the Department of Pharmaceutical Sciences (since 1-10-2017)
- President of the intradivisional group of Pharmaceutical Analysis of the Division of Medicinal Chemistry
- Proboviro of the Italian Society of Cosmetic Sciences

EDUCATION

- Degree in Pharmacy (UNIMI - 1979)
- Specialisation diploma in Hospital Pharmacy, Faculty of Pharmacy (UNIMI - 1983)

RESEARCH AND ACADEMIC CAREER

- Research fellow, UNIMI (1980-1983)
- Assistant Professor, Faculty of Pharmacy, UNIMI (1983)
- Associate Professor in Medicinal Chemistry, Faculty of Pharmacy, UNIMI (1992)
- Full Professor in Medicinal Chemistry, UNIMI (2001 → today)
- Head of the post-graduate Specialization School in Cosmetic Science and Technology, UNIMI (2001-2005)
- Coordinator of the PhD in Medicinal Chemistry, UNIMI (2005-2008)
- Coordinator of the PhD in Pharmaceutical Sciences, UNIMI (2013 - 2015)
- Coordinator of the post-degree course in Cosmetic Sciences, UNIMI (2004 → today)
- Coordinator of the post-degree course in Cosmetic Products: from the formulation to the consumer, UNIMI (2016 → today)
- Head of the Department of Pharmaceutical Sciences, UNIMI (01/01/2009 - 31/09/2017)

Main research fields

- Pharmaceutical, phytochemical and toxicological analysis; development and application in the pharmaceutical and biomedical fields of bioanalytical methodologies for detection of the free-radical induced oxidative damage in biological matrices
- ADME studies (Absorption, Distribution, Metabolism, Excretion): in vitro and in vivo metabolism of drugs and their interaction with the hepatic drug-metabolizing enzymes; pharmacokinetics
- Isolation, characterization, quantitative determination and evaluation of the biological activity (in vitro and in vivo) of active principles from vegetal sources
- Bioanalytical methodologies (chemiluminescence, electron spin resonance spectroscopy, mass spectrometry) for determination in biological matrices of nitric oxide and its bioactive storage forms (nitrosylhemoglobin, S-nitrosothiols, nitrites) in physio-pathological conditions.
- Peptidomics and proteomics by combined chromatographic/mass spectrometric approaches: study of the detoxification of cytotoxic aldehydes by histidine- and cysteine-containing peptides, of covalently-modified proteins and of ligand-protein interactions
- Analytical methodologies for the discovery and development of carnosine derivatives as new detoxifying agents of cytotoxic reactive carbonyl species (RCS)

Website of the research group <http://www.disfarm.unimi.it/ecm/home/ricerca/temi-e-linee/sezione-chimica-farmaceutica/unita-di-ricerca/carini>

Selected publications (total publications Scopus 168 – H index 43)

1. Mol M, Regazzoni L, Altomare A, Degani G, Carini M, Vistoli G, Aldini G (2017). Enzymatic and Non-Enzymatic Detoxification of 4-Hydroxynonenal: Methodological Aspects and Biological Consequences. *Free Radic Biol Med*, 2017;111:328.
2. Altomare A, Fasoli E, Colzani M, Paredes Parra XM, Ferrari M, Cilurzo F, Rumio C, Cannizzaro L, Carini M, Righetti PG, Aldini G (2016). An in depth proteomic analysis based on ProteoMiner, affinity chromatography and nano-HPLC-MS/MS to explain the potential health benefits of bovine colostrum. *J Pharm Biomed Anal*, 2016;121:297.
3. Vistoli G, Colzani M, Mazzolari A, De Maddis D, Grazioso G, Pedretti A, Carini M, Aldini G. Computational approaches in the rational design of improved carbonyl quenchers: focus on histidine containing dipeptides. *Future Med Chem*, 2016;8:1721.
4. Regazzoni L, De Courten B, Garzon D, Altomare A, Marinello C, Jakubova M, Vallova S, Krumpolec P, Carini M, Ukropec J, Ukropcova B, Aldini G. A carnosine intervention study in overweight human volunteers: bioavailability and reactive carbonyl species sequestering effect. *Sci Rep*, 2016;6:1.
5. Regazzoni L, Saligari F, Marinello C, Rossoni G, Aldini G, Carini M, Orioli M. Coffee silver skin as a source of polyphenols: high resolution mass spectrometric profiling of components and antioxidant activity. *J Funct Foods*, 2016;20:472.
6. Regazzoni L, Colombo S, Mazzolari A, Vistoli G, Carini. Serum albumin as a probe for testing the selectivity of irreversible cysteine protease inhibitors: the case of vinyl sulfones. *J Pharm Biomed Anal*, 2016;124:294.
7. Garzon D, Ariza A, Regazzoni L, Clerici R, Altomare A, Sirtori F, Carini M, Torres MJ, Pérez-Sala D, Aldini G. Mass spectrometric strategies for the identification and characterization of human serum albumin covalently adducted by amoxicillin: ex vivo studies. *Chem Res Toxicol*, 2014;27:1566.
8. Galluccio E, Cassina L, Russo I, Gelmini F, Setola E, Rampoldi L, Citterio L, Rossodivita A, Kamami M, Colombo A, Alfieri O, Carini M, Bosi E et al. A novel truncated form of eNOS associates with altered vascular function. *Cardiovasc Res*, 2014;101:492.
9. Aldini G, Carini M, Yeum K, Vistoli G. Novel molecular approaches for improving enzymatic and nonenzymatic detoxification of 4-hydroxynonenal: Toward the discovery of a novel class of bioactive compounds. *Free Radic Biol Med*, 2014;69:145.
10. Vistoli G, De Maddis D, Straniero V, Pedretti A, Pallavicini M, Valoti E, Carini M, Testa B, Aldini G. Exploring the space of histidine containing dipeptides in search of novel efficient RCS sequestering agents. *Eur J Med Chem*, 2013;66:153.
11. Vistoli G, De Maddis D, Cipak A, Zarkovic N, Carini M, Aldini G (2013). Advanced glycoxidation and lipoxidation end products (AGEs and ALEs): an overview of their mechanisms of formation. *Free Radic Res*, 2013;47:3.
12. Colzani M, Aldini G, Carini M. Mass spectrometric approaches for the identification and quantification of reactive carbonyl species protein adducts. *J Proteomics*, 2013;92:28.
13. Ariza A, Garzon D, Ruiz-Abánades D, de Los Ríos V, Vistoli G, Torres MJ, Carini M, Aldini G, Pérez-Sala D. Protein haptentation by amoxicillin: high resolution mass spectrometry analysis and identification of target proteins in serum. *J Proteomics*, 2012;77:504.
14. Aldini G, Orioli M, Rossoni G, Savi F, Braidotti P, Vistoli G, Yeum KJ, Negrisoli G, Carini M. The carbonyl scavenger carnosine ameliorates dyslipidaemia and renal function in Zucker obese rats. *J Cell Mol Med*, 2011;15:1339.
15. Aldini G, Orioli M, Carini M. Protein modification by acrolein: relevance to pathological conditions and inhibition by aldehyde sequestering agents. *Mol Nutr Food Res*, 2011;55:1301.
16. Orioli M, Vistoli G, Regazzoni L, Pedretti A, Lapolla A, Rossoni G, Canevotti R, Gamberoni L, Previtali L, Carini M, Aldini G. Design, synthesis, ADME properties, and pharmacological activities of -alanyl-D-histidine (D-carnosine) prodrugs with improved bioavailability. *ChemMedChem*, 2011;6:1269.
17. Aldini G, Vistoli G, Regazzoni L, Benfatto MC, Bettinelli I, Carini. Edaravone Inhibits Protein Carbonylation by a Direct Carbonyl-Scavenging Mechanism: Focus on Reactivity, Selectivity, and Reaction Mechanisms. *Antiox Redox Sign*, 2010;12:381.
18. Yamaguchi S, Aldini G, Ito S, Morishita N, Shibata T, Vistoli G, Carini M, Uchida K. Delta12-prostaglandin J2 as a product and ligand of human serum albumin: formation of an unusual covalent adduct at His146. *J Am Chem Soc*, 2010;132:824.
19. Suzuki YJ, Carini M, Butterfield DA. Protein Carbonylation. *Antiox Redox Sign*, 2010;12:323.
20. Dalle-Donne I, Carini M, Orioli M, Vistoli G, Regazzoni L, Colombo G, Rossi R, Milzani A, Aldini G. Protein carbonylation: 2,4-dinitrophenylhydrazine reacts with both aldehydes/ketones and sulfenic acids. *Free Radic Biol Med*, 2009;46:1411.