

CURRICULUM VITAE



PERSONAL INFORMATIONS

Name **GIOIA, MAGDA**
E-mail **magda.gioia@uniroma2.it**
Nationality Italian
Date of birth 08, 08, 1974

Actual position:

*Tenure track position at Univ. of Rome "Tor Vergata",
Dep. of Medical Science and translational Medicine*

Research Experiences and Academic Qualifications

- 2016-2007 *Permanent position Univ. of Rome "Tor Vergata" Dep. of Experimental Medicine*
- 2014 *National Scientific Habilitation for Associate Professor from Miur(Ministero dell'istruzione dell'università e della ricerca) in the scientific disciplinary sector of General Biochemistry and Clinical Biochemistry 05/E1 (due to 16/06/2020).*
- 2006 *Long-Term Scientific Mission* host institution: Centre of Blood Research of the *Department of Biochemistry & Molecular Biology University of British Columbia, Vancouver (CANADA)*
- 2005 *Post doc fellow* Department of Oral Biological & Medical Sciences Affiliations CIHR Group "*Univ. of British Columbia*" (CANADA)
- 2005 *Short-Term Scientific Mission (Exchange Visits) in the COST Framework (European Science Foundation);* host institution Department of Chemistry, FCT, Universidade Nova de Lisboa. For developing structural studies on protein-protein interaction using the algorithm Prof. Jose' J. G. Moura's laboratory have been developing (BIGGER-CHEMARA).Lisbon (PORTUGAL)
- 2005 *PhD in Molecular Biology and Biochemistry Univ. of Rome "Tor Vergata" Dep. of Experimental Medicine*

2003	<i>Italian professional habilitation to biological public work Univ. of "Tuscia" Viterbo</i>	
2000	<i>5 years-Master's degree in Biology</i>	<i>Univ. of Rome "Roma Tre".</i>

Scientific activity

Fields of Competence:

I devoted most of my work in the understanding of how extracellular matrix degradation influences cell behaviour. In particular the enzymatic mechanism characterization of how several members of Matrix Metallo Proteinases (MMPs) process big macromolecular natural substrates.

In the new field of proteomics of protease biology termed degradomics. I developed(in Professor Overall 's lab) a couple of projects based on the interests that combine powerful novel proteomic approaches with mechanistic analysis of pathogenesis by proteomics. The proteomics method (Terminal Amino Isotopic Labelling of Substrates (TAILS), was initially published in Nature Biotech 2010 and Nature Protocols 2011, and I made very significant advances in the approach by optimizing it for SILAC multiplex analyses and developing new data analysis approaches and tools. In addition, I developed whole protein iTRAQ labeling which is essential for this approach. This involved considerable method development and optimization that I was extremely capable of doing.

Executive summary of scientific production and impact:

Total number of publications	34
Refereed publications	32
Proceedings	7
Book chapters	1
Reviews	3
h-index	13
Number of total citations	687

Teaching experiences

Academic year 2016/17 20 frontal hours of lectures for the course of Chemistry and Introductory Biochemistry class for the Short degrees in the Faculty of Medicine, *University of "Tor Vergata" (It)*

2014-up to date 20 frontal hours of lectures per year for the course of Chemistry and Introductory Biochemistry class at the Faculty of Medicine of *Università Cattolica Nostra Signora del Buon Consiglio, Tirana, ALBANIA*

2012-up to date Assistant teacher at Chemistry and Introductory Biochemistry (in english) at the Faculty of Medicine and Surgery of *University of "Tor Vergata" (It)*

2007-up to date Assistant teacher at Chemistry and Introductory Biochemistry at the Faculty of Medicine of *University of "Tor Vergata" (It)*

2000-2005 Assistant teacher at Chemistry and Introductory Biochemistry at the Faculty of Medicine of *University of "Tor Vergata" (It)*

2002-2004: Twelve seminars for the course of Molecular Biology II at Biological Science faculty of *University of Camerino (It)*

Scientific publications

1. **Gioia M**, Vindigni G, Testa B, Raniolo S, Fasciglione GF, Coletta M and Biocca S *Membrane cholesterol modulates LOX-1 shedding in endothelial cells*. PLoS One. **2015** Oct 23;10 (10):e0141270.
2. Sbardella D, Tundo GR, Sciandra F, Bozzi M, **Gioia M**, Ciaccio C, Tarantino U, Brancaccio A, Coletta M, Marini S. *Proteasome Activity Is Affected by Fluctuations in Insulin-Degrading Enzyme Distribution*. PLoS One. **2015** Jul 17;10(7):e0132455.
3. Ascenzi P, Leboffe L, di Masi A, Trezza V, Fanali G, **Gioia M**, Coletta M, Fasano M. *Ligand binding to the FA3-FA4 cleft inhibits the esterase-like activity of human serum albumin*. PLoS One. **2015** Mar 19;10(3):e0120603.
4. Sbardella D, Sciandra F, **Gioia M**, Marini S, Gori A, Giardina B, Tarantino U, Coletta M, Brancaccio A, Bozzi M. *α -dystroglycan is a potential target of matrix metalloproteinase MMP-2*. Matrix Biol. **2015** Jan;41:2-7.
5. Sbardella D, Tundo GR, Fasciglione GF, **Gioia M**, Bisicchia S, Gasbarra E, Ippolito E, Tarantino U, Coletta M, Marini S. *Role of metalloproteinases in tendon pathophysiology* Mini Rev Med Chem. **2014**;14(12):978-87. Review.
6. Tomao L, Sbardella D, **Gioia M**, Di Masi A, Marini S, Ascenzi P, Coletta M. *Characterization of the prostate-specific antigen (PSA) catalytic mechanism: a pre-steady-state and steady-state study*. PLoS One. **2014** Jul 28;9(7):e102470
7. Ascenzi P, Marino M, Polticelli F, Coletta M, **Gioia M**, Marini S, Pesce A, Nardini M, Bolognesi M, Reeder BJ, Wilson MT. *Non-covalent and covalent modifications modulate the reactivity of monomeric mammalian globins*. Biochim Biophys Acta. **2013** Sep;1834(9):1750-6
8. Sbardella D, Inzitari R, Iavarone F, **Gioia M**, Marini S, Sciandra F, Castagnola M, Van den Steen PE, Opdenakker G, Giardina B, Brancaccio A, Coletta M, Bozzi M. *Enzymatic processing by MMP-2 and MMP-9 of wild-type and mutated mouse β -dystroglycan*. IUBMB Life. **2012** Dec;64(12):988-94.
9. Petretera A, Amstutz B, **Gioia M**, Hähnlein J, Baici A, Selchow P, Ferraris DM, Rizzi M, Sbardella D, Marini S, Coletta M, Sander P. *Functional characterization of the Mycobacterium tuberculosis zinc metalloproteinase Zmp1 and identification of potential substrates*. Biol Chem. **2012** Jul;393(7):631-40. .
10. Ascenzi P, **Gioia M**, Fanali G, Coletta M, Fasano M. *Pseudo-enzymatic hydrolysis of 4-nitrophenyl acetate by human serum albumin: pH-dependence of rates of individual steps* Biochem Biophys Res Commun. **2012** Aug 3;424(3):451-5.
11. Fasciglione GF, **Gioia M**, Tsukada H, Liang J, Iundusi R, Tarantino U, Coletta M, Pourmotabbed T, Marini S. *The collagenolytic action of MMP-1 is regulated by the interaction between the catalytic domain and the hinge region*. J Biol Inorg Chem. **2012** Apr;17(4):663-72.

12. Sbardella D, Fasciglione GF, **Gioia M**, Ciaccio C, Tundo GR, Marini S, Coletta M. *Human matrix metalloproteinases: an ubiquitarian class of enzymes involved in several pathological processes*. Mol Aspects Med. **2012** Apr;33(2):119-208. Review.
13. Ascenzi P, Gullotta F, **Gioia M**, Coletta M, Fasano M. *O₂-mediated oxidation of ferrous nitrosylated human serum heme-albumin is limited by nitrogen monoxide dissociation*. Biochem Biophys Res Commun. **2011** Mar 4;406(1):112-6.
14. Kleifeld O, Doucet A, auf dem Keller U, Prudova A, **Gioia M**, Kizhakkedathu J, Overall CM. *System-Wide Proteomic Identification of protease Cleavage Products by Terminal Amine Isotopic labelling of Substrates*. Nature Protocols. **2011** Sep 22;6(10):1578-611.
15. **Gioia M**, Fasciglione GF, Monaco S, Iundusi R, Sbardella D, Marini S, Tarantino U, and Coletta M. *pH dependence of the enzymatic processing of collagen I by MMP-1 (fibroblast collagenase), MMP-2 (gelatinase a) and MMP-14 ectodomain*. Biological Inorganic Chemistry. **2010** Nov;15(8):1219-32.
16. auf dem Keller U, Prudova A, **Gioia M**, Butler GS, Overall CM. *A statistics-based platform for quantitative N-terminome analysis and identification of protease cleavage products*. Mol Cell Proteomics. **2010** May;9(5):912-27. Epub 2010 Mar 20.
17. **Gioia M**, Foster LJ, Overall CM. *Cell-based identification of natural substrates and cleavage sites for extracellular proteases by SILAC proteomics*. Methods Mol Biol. **2009**;539:131-53.
18. Bozzi M, Inzitari R, Sbardella D, Monaco S, Pavoni E, **Gioia M**, Marini S, Morlacchi S, Sciandra F, Castagnola M, Giardina B, Brancaccio A, Coletta M. *Enzymatic processing of beta-dystroglycan recombinant ectodomain by MMP-9: identification of the main cleavage site*. IUBMB Life. **2009** Dec;61(12):1143-52.
19. **Gioia M**, Monaco S, Van Den Steen PE, Sbardella D, Grasso G, Marini S, Overall CM, Opdenakker G, Coletta M. *The collagen binding domain of gelatinase A modulates degradation of collagen IV by gelatinase B*. J Mol Biol. **2009** Feb 20;386(2):419-34. Epub 2008 Dec 14.

20. Ciaccio C, Tundo GR, Grasso G, Spoto G, Marasco D, Ruvo M, **Gioia M**, Rizzarelli E, Coletta M. *Somatostatin: a novel substrate and a modulator of insulin-degrading enzyme activity*. J Mol Biol. **2009** Feb 6;385(5):1556-67. Epub 2008 Nov 25.
21. Fanali G, De Sanctis G, **Gioia M**, Coletta M, Ascenzi P, Fasano M. *Reversible two-step unfolding of heme-human serum albumin: a (1)H-NMR relaxometric and circular dichroism study*. J Biol Inorg Chem. **2009** Feb;14(2):209-17. Epub 2008 Oct 21.
22. Aureli L, **Gioia M**, Cerbara I, Monaco S, Fasciglione GF, Marini S, Ascenzi P, Topai A, Coletta M. *Structural bases for substrate and inhibitor recognition by matrix metalloproteinases*. Curr Med Chem. **2008**;15(22):2192-222. Review.
23. **Gioia M**, Monaco S, Fasciglione GF, Coletti A, Modesti A, Marini S, Coletta M. Characterization of the mechanisms by which gelatinase A, neutrophil collagenase, and membrane-type metalloproteinase MMP-14 recognize collagen I and enzymatically process the two alpha-chains. J Mol Biol. 2007 May 11;368(4):1101-13. Epub 2007 Mar 2.
24. Monaco S, **Gioia M**, Rodriguez J, Fasciglione GF, Di Pierro D, Lupidi G, Krippahl L, Marini S, Coletta M. *Modulation of the proteolytic activity of matrix metalloproteinase-2 (gelatinase A) on fibrinogen*. Biochem J. 2007 Mar 15;402(3):503-13.
25. Monaco S, Sparano V, **Gioia M**, Sbardella D, Di Pierro D, Marini S, Coletta M. Enzymatic processing of collagen IV by MMP-2 (gelatinase A) affects neutrophil migration and it is modulated by extracatalytic domains. Protein Sci. 2006 Dec;15(12):2805-15. Epub 2006 Nov 6.
26. Rodríguez J, Di Pierro D, **Gioia M**, Monaco S, Delgado R, Coletta M, Marini S. *Effects of a natural extract from Mangifera indica L, and its active compound, mangiferin, on energy state and lipid peroxidation of red blood cells*. Biochim Biophys Acta. 2006 Sep;1760(9):1333-42. Epub 2006 May 4.

27. Ascenzi P, Bocedi A, Fasano M, **Gioia M**, Marini S, Coletta M. *Proton-linked subunit heterogeneity in ferrous nitrosylated human adult hemoglobin: an EPR study*. J Inorg Biochem. 2005 May;99(5):1255-9.
28. De Sanctis G, Ciaccio C, Fasciglione GF, Fiorucci L, **Gioia M**, Sinibaldi F, Marini S, Santucci R, Coletta M. *Effect of axial coordination on the kinetics of assembly and folding of the two halves of horse heart cytochrome C*. J Biol Chem. 2004 Dec 17;279(51):52860-8. Epub 2004 Sep 22.
29. Marini S, Fasciglione GF, **Gioia M**, Di Pierro D and Coletta M. *Structure-function relationships in matrix metalloproteinases*. Recent Res. Devel Biophys., 2 (2003) 173-190 ISBN: 81-7895-087-1
30. Lupidi G, Angeletti M, Eleuteri AM, Fioretti E, Marini S, **Gioia M**, Coletta M. *Aluminium modulation of proteolytic activities*. Coordination Chemistry Reviews 228 (2002) 263-269.
31. **Gioia M**, Fasciglione F, Marini S, D'Alessio S, Dickmann O, Piper M, Politi V, Tschesche H, Coletta M. *Modulation of the catalytic activity of neutrophil collagenase MMP-8 on bovine collagen I. Role of the activation cleavage and of the hemopexin-like domain*. The Journal of Biological Chemistry Vol. 277, No. 26 Issue of June 28, pp. 23123-23130, 2002.