

EUROPASS CURRICULUM VITAE



PERSONAL INFORMATION

Name **MARINA POZZOLINI**
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Nationality **Italian**

Date and place of birth **July 4th 1973, Genoa (Italy)**

WORK EXPERIENCE

2017 Full researcher position at the Department of Earth, Environment and Life Sciences in the Genova University (Italy)

2012-2016 Fellowship at the Department of Earth, Environment and Life Sciences in the Genova University (Italy) with research activity on recombinant production of collagen polypeptides derived from marine sponge *C. reniformis*

2009-2012 Postdoctoral position at Center of Excellence for the study of molecular communication mechanisms between cells (CEBR), University of Genova (Italy) with research activity on acquisition of new application protocols from the results obtained in the framework of the european project entitled "biomineralization for lithography and microelectronics "

2006-2009 Postdoctoral position at Center of Excellence for the study of molecular communication mechanisms between cells (CEBR), University of Genova (Italy) with research activity on: Biochemistry and molecular biology study of protein involved in silica polymerization in marine sponges".

2004 -2006 Fellowship at the Department of Experimental Medicine, biochemistry section, University of Genova (Italy) with research activity on: "(c-ADPR) effect on cell-cell communication and on macrophages response to toxic dusts "

2001-2003 Doctoral research study on purification, characterization, and CDNA cloning of Silicatein from marine sponge *Pertosia ficiformis* (Porifera) at the Department of Experimental Medicine, biochemistry section, University of Genova (Italy)

2000-2001 Fellowship at the Department of Experimental Medicine, biochemistry section, University of Genova (Italy) with research activity on chemical synthesis and characterization of Peptide Nucleic Acids (PNA) ".

1999-2000 Trainee at at the Department of Experimental Medicine, biochemistry section, University of Genova (Italy).

1996-1998 Internship at the Department of Experimental Medicine, biochemistry section, University of Genova (Italy)

EDUCATION AND TRAINING

2004	Biochemistry PhD at the University of Genova. Thesis title: "Purification, characterization, and CDNA cloning of Silicatein from marine sponge <i>Pertosia ficiformis</i> (Porifera)"
2000	Italian Biologist National Licensing Examination
1998	Graduation in Biological Sciences at the University of Genova, with 110/110 <i>summa cum laude</i> . Thesis title: "Synthesis, characterization and biological activity of Peptide Nucleic Acids (PNA) that inhibit inducible NO Synthase expression "
1992	Certificate of high school Genoa, Italy

PERSONA SKILLS AND COMPETENCES

NATIVE LANGUAGE	Italian
OTHER LANGUAGES	English
READING	Good
WRITING	Good
SPOKEN INTERACTION AND PRODUCTION	Good
RELATIONAL SKILLS AND COMPETENCES	The ability and competences developed in laboratory are witness from many occurred collaboration with local, national and international researchers, (see attached publications)
ORGANIZATIONAL SKILLS AND COMPETENCES	Organization and coordination and set up of protocol for practical part of the Molecular Biology courses for the Master of Science degree in Biological Sciences at Genova University.
TECHNICAL SKILLS AND COMPETENCES	Biochemical skills as proteins purification, electrophoresis and Western blotting techniques, methods of analysis and purification by chromatography HPLC and traditional. Specific experience in cell lines handling and characterization of their metabolic pathways, cell viability assays, marine invertebrates (Porifera) cell manipulation techniques. Molecular biology skills as nucleic acids extraction from cells and tissues of mammals and marine invertebrates, identification and cloning of cDNAs, manipulation of nucleic acids with restriction enzymes, PCR, quantitative PCR, preparation of cDNA library, techniques for quantitative evaluation of transcription factors (EMSA), techniques of in vitro translation of mRNA, production of recombinant proteins in prokaryotic and eukaryotic systems.
OTHER SKILLS AND COMPETENCES	Good knowledge of the main informatics tools for bibliographical and gene sequences search, alignment and structural analysis of nucleic acids and proteins. Good knowledge of theoretical and informatics statistical tools for the management of experimental data.

ADDITIONAL INFORMATION

MAIN RESEARCH LINES FOLLOWED

Biochemical approaches to the identification of substances with cytotoxic effects of extracts of sea sponge *Chondrosia reniformis* (Demospongiae, Porifera).
Studies on the effect of cytotoxic and inflammatory quartz powders on murine macrophage lines.
Studies on biochemical and molecular mechanisms biosilicification in sea sponges models.
Study of evolution of immune system
Biochemical studies and molecular biology of extracellular matrix proteins of sea sponges.

CURRENT RESEARCH INTERESTS

Biochemical and molecular biology studies of extracellular matrix proteins of sea sponges and their biotechnological applications

MAIN RESEARCH PROJECTS FOLLOWED

- Vigoni Project, 2003, Italy-Germany cooperation on "Molecular biology and biochemistry of biomineralization process of silica (SiO₂) in marine sponges".
- European community project , Specific Targeted Research Project, Call FP6-2004-NMP-TI-4 8/12/2004, 2005, "Biomineralization for lithography and microelectronics, BIO-LITHO"
- CIPE project 2004 - Scientific research - first supplementary, sub-project "Use of marine organism (invertebrates) for production of hydrolytic enzymes or bio-depurations."
- Project CIPE 2007 - Scientific research - second supplementary, sub-project "Use of biosilica structures for fluorescence enzymes and molecules encapsulation".
- Scientific Research Programs of Relevant National Interest , (PRIN), 2007, "molecular biology study of protein involved in silica and carbonate biomineralization".
- European community project FP7 grant agreement n: 266033 SPongE Enzyme and Cell for Innovative AppLication-SPECIAL.

COMMUNICATIONS

- May 2000, National Meeting of the Italian Society of Biochemistry and Molecular , Pavia. **Oral presentation.**
- 21\25 October 2002 3rd International Symposium on Silica, Silicosis, Cancer and Other Diseases; Santa Margherita Ligure. Poster presentation with title dal titolo "A pre-treatment in ascorbic acid increases quartz toxicity to a murine macrophage cell line". Marco Giovine, Marina Pozzolini, Ivana Fenoglio, Mara Ghiazza, Sonia Scarfi, Bice Fubini, Umberto Benatti.
- 4\6 June 2003, CNB6-6° National Congress of Biotechnology, Padova. **Oral presentation** "A model for biosilicification studies: primmorphs from the marine sponge *Petrosia ficiformis* and molecular cloning of silicatein gene
- 07\13 Mayo 2006, 7° International Sponge Symposium, Buzios Rio de Janeiro (Brasil). **Oral presentation .**
- 20\24 September 2010, 8° International Sponge Symposium, Girona (Spain). **Oral presentation**
- 28 October 2011, 1st SPECIAL Open day - Marine Biotechnology, Genova. **Oral presentation.**
- 8 June 2012, Annual meeting of SIB group of Marine Biochemistry and environment BMA, Messina. **Oral presentation .**
- 14\16 September 2015, 58° National Meeting of the Italian Society of Biochemistry and Molecular , Urbino Poster presentation with title_ "Pichia pastoris production of Prolyl-4 Hydroxylase derived from the marine sponge *C. reniformis*: a new biotechnological tool for recombinant production of marine collagen "Marina Pozzolini, Sonia Scarfi, Francesca Mussino, Annalisa Salis, Gianluca Damonte, Umberto Benatti and Marco Giovine.

- 25-30 June 2017 "10th World Sponge Conference" NUI Galway, Poster presentation with title "Recombinant Production Of Hydroxylated Collagen Polypeptides Derived From The Demospongia C. reniformis: A New Biotechnological Source Of Marine Collagen" Marina Pozzolini, Sonia Scarfi, Annalisa Salis, Gianluca Damonte and Marco Giovine.

TEACHING ACTIVITY

Adjunct Professor of Molecular Biology at Genoa University from 2005.
Activity as supervisor of 11 degree thesis in Biological Science
Member from 2005 of the Italian Society of Biochemistry and Molecular Biology (SIB)
Member from 2017 of the Italian Society of Biophysics and Molecular Biology (SIBBM)

ANNEXES

Attached 1 publications list

Attached 1\ Articles and Patents list

Scientific papers

1. Scarfi S, Giovine M, Gasparini A, Damonte G, Millo E, **Pozzolini M**, Benatti U (1999) "Modified peptide nucleic acids are internalized in mouse macrophages RAW 264.7 and inhibit nitric oxide synthase" *FEBS Letters* 451, 264-268.
2. Giovine M, Signorello MG, **Pozzolini M**, Giuliana Leoncini (1999) "Regulation of L-arginine uptake by Ca²⁺ in human platelets". *FEBS Letters* 461, 43-46.
3. Giovine M, **Pozzolini M**, Favre A, Bavestrello G, Cerrano C, Ottaviani F, Chiarantini L, Cerasi A, Canmgjotti M, Zocchi E, Scarfi S, Sarà M, Benatti U (2001) "Heat stress-activated, calcium dependent Nitric Oxide Synthase in sponges" *Nitric Oxide* 5(5), 427-431.
4. Penco S, Scarfi S, Giovine M, Damonte G, Millo E, Villaggio B, Passalacqua M, **Pozzolini M**, Garre' C, Benatti U., (2001) "Identification of an import signal for, and the nuclear localization of, human lactoferrin." *Biotechnol. Appl. Biochem.* 34(Pt 3), 151-159.
5. Giovine M, **Pozzolini M**, Fenoglio I, Scarfi S, Ghiazza M, Benatti U, and Fubini B (2002) "Crystalline Silica incubated in ascorbic acid acquires higher cytotoxic potential", *Toxicol. Indust. health*; 18: 249-255.
6. **Pozzolini M**, Scarfi S, Benatti U, and Giovine M (2003) "Interference on MTT cell viability assay in activated macrophage cell line" *Anal. Biochem.*, 31(2), 338-341.
7. Scarfi S, Giovine M, Pintus R, Millo E, Clavarino E, **Pozzolini M**, Sturla L, Stock RP, Benatti U, Damonte G (2003) "Selective inhibition of inducible Cyclooxygenase II expression by Antisense Peptide Nucleic Acids in intact murine macrophages", *Biotechnol Appl Biochem.*;38,61-69.
8. Croce G, Frache A, Milanesio M, Marchese L, Causà M, Viterbo D, Barbaglia A, Bolis V, Bavestrello G, Cerrano C, Benatti U, **Pozzolini M**, Giovine M, Amenitsch H, (2004)"Structural characterization of spicules from marine sponges" *Biophys J.* 86, 526-534.
9. **Pozzolini M**, Sturla L, Cerrano C, Bavestrello G, Camardella L, Parodi AM, Raheli F, Benatti U, Muller WE, Giovine M. (2004) "Molecular Cloning of Silicatein Gene from Marine Sponge *Petrosia ficiformis* (Porifera, Demospongiae) and Development of Primmorphs as a Model for Biosilicification Studies." *Mar Biotechnol (NY)* 6, 594-603.
10. Scarfi S, Benatti U, **Pozzolini M**, Clavarino E, Ferraris C, Giovine M (2007) "Ascorbic acid-pretreated quartz enhances cyclo-oxygenase-2 expression in RAW 264.7 murine macrophages" *FEBS J.* 274, 61-69.
11. Scarfi S, Magnone M, Ferraris M, **Pozzolini M**, Benvenuto F, Benatti, Giovine M (2009) "Ascorbic acid pre-treated quartz stimulates TNF-alpha release in RAW 264.7 murine macrophages through ROS production and membrane lipid peroxidation", *Respir Res.* 19, 10:25.

12. Armirotti A, Damonte G, **Pozzolini M**, Mussino F, Cerrano C, Salis A, Benatti U, Giovine M. (2009) "Primary structure and post-translational modifications of silicatein beta from the marine sponge *Petrosia ficiformis* (Poiret, 1789). *J Proteome Res.* 8(8), 3995-4004.
13. **Pozzolini M**, Valisano L, Cerrano C., Menta M., Schiaparelli S., Bavestrello G., Benatti U., Giovine M.(2009) "Influence of rocky substrata on three-dimensional sponge cells model development." *In Vitro Cell Dev Biol Anim.* 46, 140-147.
14. Valisano L, **Pozzolini M**, Giovine M, Cerrano C, (2011) "Biosilica deposition in the marine sponge *Petrosia ficiformis* (Poiret, 1789): the model of primmorphs reveals time dependence of spiculogenesis". *Hydrobiologia* 687, 259-273.
15. **Pozzolini M**, Bruzzone F, Berilli V, Mussino F, Cerrano C, Benatti U, Giovine M. (2012) "Molecular Characterization of a Nonfibrillar Collagen from the Marine Sponge *Chondrosia reniformis* Nardo 1847 and Positive Effects of Soluble Silicates on Its Expression". *Mar Biotechnol* 14, 281-287.
16. Mussino F, **Pozzolini M**, Valisano L, Cerrano C, Benatti U, Giovine M. (2012) "Primmorphs Cryopreservation: A New Method for Long-Time Storage of Sponge Cells". *Mar Biotechnol (NY)*. Nov 15
17. **Pozzolini M**, Mussino F, Cerrano C, Scarfi, Giovine M. (2014), "Sponge cell cultivation: Optimization of the model *Petrosia ficiformis* (Poiret 1789) *Journal of Experimental Marine Biology and Ecology*, 454, 70-77.
18. **Pozzolini M**, Scarfi S, Mussino F, Ferrando S, Gallus L, Giovine M. (2015) "Molecular Cloning, Characterization, and Expression Analysis of a Prolyl 4-Hydroxylase from the Marine Sponge *Chondrosia reniformis*. " *Mar Biotechnol (NY)*. 17 (393-407).
19. **Pozzolini M**, Scarfi S, Mussino F, Salis A, Damonte G, Benatti U, Giovine M. (2015) "Pichia pastoris production of a prolyl 4-hydroxylase derived from *Chondrosia reniformis* sponge: A new biotechnological tool for the recombinant production of marine collagen" *J Biotechnol.* 20;208-228-36.
20. **Pozzolini M**, Scarfi S, Mussino F, Ghignone S, Vezzulli L, Giovine M. (2016)" Molecular characterization and expression analysis of the first Porifera tumor necrosis factor superfamily member and of its putative receptor in the marine sponge *Chondrosia reniformis*" *Dev Comp Immunol.* Apr;57:88-98.
21. **Pozzolini M**, Ferrando S, Gallus L, Gambardella C. Giovine M (2016) "Aquaporin in *Chondrosia reniformis* Nardo 1847 and its possible role in interaction between cells and engulfed siliceous particles, *Biol Bull.* 2016 Jun;230(3):220-232.
22. **Pozzolini M**, Vergani L, Ragazzoni M, Delpiano L, Grasselli E, Voci A, Giovine M, Scarfi S. (2016)"Different reactivity of primary fibroblasts and endothelial cells towards crystalline silica: A surface radical matter. *Toxicology.* 15; 361-362:12-23.
23. Amaroli A, Ferrando S, Hanna R, Gallus L, Benedicenti A, Scarfi S, **Pozzolini M**, Benedicenti S. The photobiomodulation effect of higher-fluence 808nm laser therapy with a flat-top hand-piece on the wound healing of the earthworm *Dendrobaena veneta*: a brief report. *Lasers in Medical Science.* 10.1007/s10103-016-2132-3.
24. **Pozzolini M**, Scarfi S, Gallus L, Ferrando S, Cerrano C, Giovine M. Silica-induced fibrosis: an ancient response from the early metazoans. *J Exp Biol.* 2017 Nov 1;220(Pt 21):4007-4015. doi: 10.1242/jeb.166405.
25. Amaroli A, Ferrando S, Pozzolini M, Gallus L, Parker S, Benedicenti S The earthworm *Dendrobaena veneta* (Annelida): A new experimental-organism for photobiomodulation and wound healing. *Eur J Histochem.* 2018 Feb 9;62(1):2867. doi: 10.4081/ejh.2018.2867.
26. **Pozzolini M**, Scarfi S, Gallus L, Castellano M, Vicini S, Cortese K, Gagliani MC, Bertolino M, Costa G and Giovine M, Production, Characterization and Biocompatibility Evaluation of Collagen Membranes Derived From Marine Sponge *Chondrosia reniformis* (Nardo, 1847), 2018, *Marine Drugs* (in press).

Book chapter

1. Giovine M, Scarfi S, **Pozzolini M**, Penna A, Cerrano C. (2013) "Cell reactivity to different silica." Prog Mol Subcell Biol.54:143-74.

Patents

1. Scarfi S., Pozzolini M., M. Giovine, Benatti U. (2005). Metodo per la valutazione in vitro della potenziale tossicità di polveri di tipo industriale e relativo kit analitico.RM2005A000200. Università degli Studi di Genova.
2. Pozzolini M, Giovine M, Mussino F, Scarfi S, Berilli V, Salis A, Damonte G, Benatti U (2013). Metodo per la produzione di collagene marino ricombinante e organismo capace di produrre detto collagene marino. GE2013A000040, Università degli Studi di Genova.
3. Marina Pozzolini, Umberto Benatti, Francesca Mussino, Sonia Scarfi, Valentina Berilli, Annalisa Salis, Gianluca Damonte, Marco Giovine (2014). Method for the production of collagen proteins derived from marine sponges and an organism able to produce said proteins. PCT/EP2014/05796