



## PERSONAL INFORMATION

Name **SONIA SCARFI**  
Address **UNIVERSITA' DEGLI STUDI DI GENOVA,  
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## WORK EXPERIENCE

- Dates (from - to) June 2015 - today  
• Name and address of the employer University of Genova– Department of Earth, Environment and Life Sciences, Italy  
• Type of business or sector Academia  
• Occupation or position held **Associate professor – Molecular Biology (BIO/11)**  
• Main activities and responsibilities Head of research projects, head of Molecular Biology Lab, tutor of master, bachelor, and PhD students' theses, teacher of molecular biology courses for the Biological Sciences master's degree, for the Medical-Pharmaceutical Biotechnology bachelor's and master's degree, and for the medical school degree.
- Dates (from - to) December 2011 – May 2015  
• Name and address of the employer University of Genova– Department of Earth, Environment and Life Sciences, Italy  
• Type of business or sector Academia  
• Occupation or position held **Assistant professor – Molecular Biology (BIO/11)**  
• Main activities and responsibilities Participant in research projects, tutor of master and bachelor students' theses, teacher of molecular biology courses for the Biological Sciences master's degree, for the Medical-Pharmaceutical Biotechnology bachelor's and master's degree, and for the medical school degree.
- Dates (from - to) 1999-2011  
• Name and address of the employer University of Genova– Department of Experimental Medicine, Italy  
• Type of business or sector Academia  
• Occupation or position held **Post Doc – Contract researcher**  
• Main activities and responsibilities Participation to numerous research projects on biotechnology, biochemistry, molecular biology

## EDUCATION AND TRAINING

- Dates (from - to) 1995 – 1998  
• Name and type of organisation providing education and training Università degli Studi di Milano, Italy  
• Principal subjects/occupational skills covered Study on the synthesis and biological characterization of modified Peptide Nucleic Acids for the inhibition of translation of inducible NO synthase  
• Title of qualification awarded **PhD in “Biotechnology applied to Pharmacology and cellular and molecular biotechnology applied to the biomedical field”**

- Dates (from - to)
- Name and type of organisation providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

1988 - 1992

Università degli Studi di Genova, Italy

Experimental degree thesis aimed at studying the antibodies against the cytoplasmatic granules of neutrophils granulocytes (ANCA) in the diagnostic of vasculitis

### Graduation in Biological Sciences

## PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE  
OTHER LANGUAGES

ITALIAN  
ENGLISH, SPANISH

### SCIENTIFIC SKILLS AND COMPETENCES

*Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (for example culture and sports), etc.*

- Research interests (5 Key words): marine biotechnology, toxicology, inflammatory processes, adult stem cell biology, regenerative medicine.
- Author of more than 80 publications on Scientific Journals under peer review system.
- Author of 6 National/International Patents.
- Lecturer of more than 50 academic courses or modules since 1999 (i.e. Medicinal Chemistry, Chemistry and Biochemistry, Advanced Biochemistry, Molecular Biology, Recombinant DNA technologies, Epigenetics, Biomedical technologies).
- Organization and Communication at national and international congresses (more than 30 communications).
- Supervisor of more than 30 university theses (bachelor's and master's); guiding tutor of numerous doctoral theses.

### RELEVANT ROLES AND COMPETENCES

*Coordination and administration of people, projects and budgets; at work, in voluntary work (for example culture and sports) and at home, etc.*

- Member of the multidisciplinary research group of Molecular Biology and Marine Biotechnology, dedicated to the study of marine organisms, marine drug discovery, biomaterials, and study of inflammatory processes at the University of Genova.
- Participation to numerous research projects as principal investigator or working group member. The most relevant in the last 5 years:
  - o 2018-2022: "Fibres a Multidisciplinary Mineralogical, Crystal-Chemical and Biological Project to Amend the Paradigm of Toxicity and Cancerogenicity of Mineral Fibres" Funding body: MIUR –PRIN. Prot. 20173X8WA4. Role: member of University of Genoa work group;
  - o 2018-2020: "SMARTEX: Sponge MARiculture for innovative bioTechnological EXpotation" project financed by the Ministry of Foreign Affairs as part of the Italy-Israel bilateral scientific cooperation projects. Role: member of University of Genoa work group;
  - o 2022-2024: "Development of a physiologically relevant 3D in vitro model of human alveolar tissue for the evaluation of specific biomarkers of the inflammatory and carcinogenic potential, associated with the inhalation of toxic agents". Research and development projects, through experimental technologies, of methods to replace the animal model, year 2022, financed by the Ministry of Health. Role: Head of the project;
  - o Horizon IA Europe Project: NOVAFOODIES (Proposal number: 101084180-2) "DemoNstratiOn of innoVative Functional food production systEmS based on a sustainable value chain of marine and freshwater raw materials for conscientious European consumers". Role: member of University of Genoa working group;
  - o PRIN-2022 project: 2022BCL34N - Sediments Eco-recycling Exploitation, Development and Sustainability [SEEDS], funded by the Italian Ministry of University and Research. Role: Head of the University of Genoa working group;
- Member of the board of the "Interuniversity Center for the promotion of the 3Rs principles in teaching and Research (Centro 3R), Italy" from its foundation by University of Pisa and Genova in 2018, and head of the University of Genoa Research Unit from 2022.
- Member of the PhD board of the doctoral course in Science and Technologies for the Earth and Environment (STAT) of the University of Genova from 2014, and head of the

biological curriculum “Biology applied to agriculture and environment” of the abovementioned PhD school from 2024.

- Member of the scientific committee for the organization of the second annual congress of the 3R CENTER “3Rs in Italian Universities”, held in Genoa on 20-21 June 2019.
- Member of the scientific committee of the fourth annual congress of the 3R CENTER “The role of 3Rs in the age of One Health: where we are and where we're going”, held in Milan on 13-15 September 2023.
- Member of the organization committee of the Summ3R School of the Italian 3R's Center from 9th to 11th July 2025.

#### PUBLICATION INDEXES (SCOPUS)

- NUMBER OF PUBLICATIONS: 82
- TOTAL NUMBER OF CITATIONS: 2610
- H-INDEX: 31

#### PUBLICATION INDEXES (GOOGLE SCHOLAR)

- NUMBER OF PUBLICATIONS: 82
- TOTAL NUMBER OF CITATIONS: 3612
- H-INDEX: 34

#### ERC FIELDS AND SUBFIELDS

- LS1\_9 Molecular mechanisms of signalling processes
- LS3\_5 Cell signalling and signal transduction, exosome biology
- LS7\_4 Regenerative medicine
- LS7\_7 Pharmacology and toxicology
- LS9\_3 Bioengineering of cells, tissues, organs and organisms

1. Pozzolini M, **Scarfi S**, Mussino F, Ferrando S, Gallus L, Giovine M. Molecular cloning, characterization and expression analysis of a prolyl 4-hydroxylase from the marine sponge *Chondrosia reniformis*. *Mar Biotechnol (NY)*, 2015, 17(4): 393-407.
2. Pozzolini M, **Scarfi S**, Mussino F, Salis A, Damonte G, Benatti U, Giovine M. 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*, 2015, 208:28-36.
3. Pozzolini M, **Scarfi S**, Ghignone S, Mussino F, Vezzulli L, Cerrano C, Giovine M. 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*, 2016, 57:88-98. [doi: 10.1016/j.dci.2015.12.011]
4. **Scarfi S**. Use of bone morphogenetic proteins in mesenchymal stem cell stimulation of cartilage and bone repair. *World J Stem Cells* 2016; 8(1): 1-12 [DOI: <http://dx.doi.org/10.4252/wjsc.v8.i1.1>]
5. Pozzolini M, Vergani L, Ragazzoni M, Delpiano L, Grasselli E, Voci A, Giovine M, **Scarfi S**. Different reactivity of primary fibroblasts and endothelial cells towards crystalline silica: A surface radical matter. *Toxicology*, 2016, 361-362: 12-23 [DOI: doi: 10.1016/j.tox.2016.07.001]
6. Gallus L, Marchesotti E, **Scarfi S**, Amaroli A, Franceschini V, Bettini S, Abbas G, Gambradella C, Ferrando S. Effects of urea on the olfactory reception in zebrafish (*Danio rerio*). *Journal of Biological Research (Italy)*, 2016 89(1): 5868 [DOI: 10.4081/jbr.2016.5868]
7. Sturla L, Mannino E, **Scarfi S**, Bruzzone S, Magnone M, Sociali G, Booz V, Guida L, Vigliarolo T, Fresia C, Emionite L, Buschiazzo A, Marini C, Sambuceti G, De Flora A, Zocchi E. Abscisic acid enhances glucose disposal and induces brown fat activity in adipocytes in vitro and in vivo. *Biochim Biophys Acta*, 2017, 1862(2): 131-144. [DOI: 10.1016/j.bbali.2016.11.005].
8. Garbati P, Ravera S, **Scarfi S**, Salis A, Rosano C, Poggi A, Damonte G, Millo E, Balestrino M. Effects on energy metabolism of two guanidine molecules, (Boc)2-creatine and metformin. *J Cell Biochem*, 2017, 118(9):2700-2711 [DOI: 10.1002/jcb.25914].
9. 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, 220(Pt 21): 4007-4015 [DOI: 10.1242/jeb.166405]
10. Amaroli A, Ferrando S, Hanna R, Gallus L, Benedicenti A, **Scarfi S**, Pozzolini M, Benedicenti S. The photobiomodulation effect of higher-fluence 808-nm laser therapy with a flat-top handpiece on the wound healing of the earthworm *Dendrobaena veneta*: a brief report. *Lasers in Medical Sciences*, 2018, 33(1):221-225. [DOI: 10.1007/s10103-016-2132-3]
11. Pozzolini M., **Scarfi S.**, Gallus L., Castellano M., Vicini S., Cortese K., Gagliani M.C., Bertolino M., Costa G., Giovine M. Production, Characterization and Biocompatibility Evaluation of Collagen Membranes Derived from Marine Sponge *Chondrosia reniformis* Nardo, 1847. *Marine Drugs*, 2018, 29;16(4). pii: E111.
12. Pozzolini M, Millo E, Oliveri C, Mirata S, Salis A, Damonte G, Arkel M, **Scarfi S**. Elicited ROS Scavenging Activity, Photoprotective, and Wound-Healing Properties of Collagen-Derived Peptides from the Marine Sponge *Chondrosia reniformis*. *Mar Drugs*. 2018, 16(12). pii: E465. doi: 10.3390/md16120465.
13. Bonfiglio T, Biggi F, Bassi AM, Ferrando S, Gallus L, Loiacono F, Ravera S, Rottigni M, **Scarfi S**, Strollo F, Vernazza S, Sabbatini M, Masini MA. Simulated microgravity induces nuclear translocation of BAX and BCL-2 in glial cultured C6 cells. *Heliyon*, 2019, 5(6). e017898. <https://doi.org/10.1016/j.heliyon.2019.e01798>
14. Pozzolini M, Gallus L, Ghignone S, Ferrando S, Candiani S, Bozzo M, Bertolino M, Costa G, Bavestrello G, **Scarfi S**. Insights into the evolution of metazoan regenerative mechanisms: roles of TGF superfamily members in tissue regeneration of the marine sponge *Chondrosia reniformis*. *J Exp Biol*. 2019, 222(Pt 17). pii: jeb207894. doi: 10.1242/jeb.207894.
15. Vernazza S, Tirendi S, **Scarfi S**, Passalacqua M, Oddone F, Traverso CE, Rizzato I, Bassi AM, Saccà SC. 2D- and 3D-cultures of human trabecular meshwork cells: A preliminary assessment of an in vitro model for glaucoma study. *PLoS One*. 2019, 14(9): e0221942. doi: 10.1371/journal.pone.0221942. eCollection 2019.
16. Greco G, Di Piazza S, Gallus L, Amaroli A, Pozzolini M, Ferrando S, Bertolino M, **Scarfi S**, Zotti M. First identification of a fatal fungal infection of the marine sponge *Chondrosia reniformis* by *Aspergillus tubingensis*. *Dis Aquat Organ*. 2019, 135(3):227-239. doi: 10.3354/dao03397.

17. Saccà SC, Tirendi S, **Scarfi S**, Passalacqua M, Oddone F, Traverso CE, Vernazza S, Bassi AM. An advanced in vitro model to assess glaucoma onset. *ALTEX*. 2020;37(3):492. doi: 10.14573/altex.1909262e.
18. Doderò A, **Scarfi S**, Pozzolini M, Vicini S, Alloisio M, Castellano M. Alginate-Based Electrospun Membranes Containing ZnO Nanoparticles as Potential Wound Healing Patches: Biological, Mechanical, and Physicochemical Characterization. *ACS Appl Mater Interfaces*. 2020 Jan 22;12(3):3371-3381. doi: 10.1021/acsami.9b17597.
19. Saccà SC, Izzotti A, Vernazza S, Tirendi S, **Scarfi S**, Gandolfi S, Bassi AM. Can Polyphenols in Eye Drops Be Useful for Trabecular Protection from Oxidative Damage? *J Clin Med*. 2020 Nov 6;9(11):3584. doi: 10.3390/jcm9113584. PMID: 33172106
20. **Scarfi S**, Pozzolini M, Oliveri C, Mirata S, Salis A, Damonte G, Fenoglio D, Altosole T, Ilan M, Bertolino M, Giovine M. Identification, Purification and Molecular Characterization of Chondrosin, a New Protein with Anti-tumoral Activity from the Marine Sponge *Chondrosia Reniformis* Nardo 1847. *Mar Drugs*. 2020; 18(8):409. doi: 10.3390/md18080409.
21. De La Fuente G, Fontana M, Asnaghi V, Chiantore M, Mirata S, Salis A, Damonte G, **Scarfi S**. The Remarkable Antioxidant and Anti-Inflammatory Potential of the Extracts of the Brown Alga *Cystoseira amentacea* var. *stricta*. *Mar Drugs*. 2020; 19(1): E2. doi: 10.3390/md19010002.
22. Doderò A, **Scarfi S**, Mirata S, Sionkowska A, Vicini S, Alloisio M, Castellano M. Effect of Crosslinking Type on the Physical-Chemical Properties and Biocompatibility of Chitosan-Based Electrospun Membranes. *Polymers (Basel)* 2021, 13(5):831. doi: 10.3390/polym13050831. PMID: 33803084
23. Doderò A, Donati I, **Scarfi S**, Mirata S, Alberti S, Lova P, Comoretto D, Alloisio M, Vicini S, Castellano M. Effect of sodium alginate molecular structure on electrospun membrane cell adhesion. *Mater Sci Eng C Mater Biol Appl*. 2021, 124:112067. doi: 10.1016/j.msec.2021.112067.
24. Gualtieri AF, Zoboli A, Filaferro M, Benassi M, **Scarfi S**, Mirata S, Avallone R, Vitale G, Bailey M, Harper M, Di Giuseppe D. In vitro toxicity of fibrous glaucophane. *Toxicology*. 2021, 454:152743. doi: 10.1016/j.tox.2021.152743.
25. Vernazza S, Tirendi S, Passalacqua M, Piacente F, **Scarfi S**, Oddone F, Bassi AM. An Innovative In Vitro Open-Angle Glaucoma Model (IVOM) Shows Changes Induced by Increased Ocular Pressure and Oxidative Stress. *Int J Mol Sci*. 2021, 22(22):12129. doi: 10.3390/ijms222212129.
26. Di Giuseppe D, Sconamiglio V, Malferrari D, Nodari L, Pasquali L, Lassinantti Gualtieri M, **Scarfi S**, Mirata S, Tessari U, Hanuskova M, Gualtieri AF. Characterization of fibrous Wollastonite NYAFG G in view of its use as a negative standard for in vitro toxicity tests. *Minerals* 2021, 11:1378. doi: 10.3390/min11121378
27. Di Giuseppe D, **Scarfi S**, Alessandrini A, Bassi AM, Mirata S, Almonti V, Ragazzini G, Mescola A, Filaferro M, Avallone R, Vitale G, Scognamiglio V, Gualtieri AF. Acute cytotoxicity of mineral fibres observed by time-lapse video microscopy. *Toxicology* 2022, 466:153081. doi: 10.1016/j.tox.2021.153081
28. Mirata S, Almonti V, Di Giuseppe D, Fornasini L, Raneri S, Vernazza S, Bersani D, Gualtieri AF, Bassi AM, **Scarfi S**. The Acute Toxicity of Mineral Fibres: A Systematic In Vitro Study Using Different THP-1 Macrophage Phenotypes. *Int J Mol Sci*. 2022; 23(5):2840. doi: 10.3390/ijms23052840.
29. Castellano M., Doderò A., **Scarfi S.**, Mirata S., Pozzolini M., Tassara E., Sionkowska A., Adamiak K., Alloisio M., Vicini S. Chitosan–Collagen Electrospun Nanofibers Loaded with Curcumin as Wound-Healing Patches. *Polymers*, 2023, 15 (13): 2931. DOI: 10.3390/polym15132931
30. Mirata S., Asnaghi V., Chiantore M., Salis A., Benvenuti M., Damonte G., **Scarfi S**. Photoprotective and Anti-Aging Properties of the Apical Frond Extracts from the Mediterranean Seaweed *Ericaria amentacea*. *Marine Drugs*, 2023, 21 (5): 306. DOI: 10.3390/md21050306
31. Gualtieri A.F., Mirata S., Almonti V., Bassi A.M., Meo C., **Scarfi S.**, Zapparoli M., Armeni T., Cianfruglia L., Marzioni D., Fantone S., Tossetta G., Stipa P., Laudadio E., Sabbatini S., Minelli C., Di Valerio S., Vaiasicca S., Procopio A.D., Pugnaroni A. In vitro toxicity of short vs long chrysotile fibres. *Periodico di Mineralogia*, 2023, 92 (2): 203-222. DOI: 10.13133/2239-1002/18012
32. Bassi A.M., Mirata S., Almonti V., Tirendi S., Vernazza S., Fornasini L., Raneri S., Bersani D., Passalacqua M., Gualtieri A.F., **Scarfi S**. Cytotoxic and pro-inflammatory early effects of mineral fibres on human alveolar epithelial and immune cells. *Periodico di Mineralogia*, 2023, 92 (2): 223-239. DOI: 10.13133/2239-1002/18082
33. Gualtieri A.F., Leoncini M., Fantone S., Valerio S.D., Tossetta G., Procopio A.D., Marzioni D., Pugnaroni A., Bassi A.M., Almonti V., Mirata S., Vernazza S., Tirendi S.,

- Marengo B., Traverso N., Passalacqua M., **Scarfi S.**, Raneri S., Fornasini L., Bersani D., Perchiazzi N., Ballirano P., Pacella A., Bloise A., Ottaviani M.F., Mattioli M., Giordani M., Ventura G.D. PRIN 2017 Fibres - A Multidisciplinary Mineralogical, Crystal-Chemical and Biological Project. What have we learned after four years of research? *Periodico di Mineralogia*, 2023, 92 (2): 143-158. DOI: 10.13133/2239-1002/18021
34. Benvenuti M., Di Piazza S., Salis A., Cecchi G., Zotti M., **Scarfi S.**, Damonte G. A novel method for the extraction and characterization of metabolites from Basidiomycota: *Pleurotus ostreatus* (Jacq.) P. Kumm., 1871 as a case study. *Sep Sci Plus*, 2023, 10 (6): e2300116. <https://doi.org/10.1002/sscp.202300116>
  35. Raneri S, Gianoncelli A, Bonanni V, Mirata S, **Scarfi S**, Fornasini L, Bersani D, Baroni D, Picco C, Gualtieri AF. The influence of cation exchange on the possible mechanism of erionite toxicity: A synchrotron-based micro-X-ray fluorescence study on THP-1-derived macrophages exposed to erionite-Na. *Environ Res*. 2024, 252: 118878. doi: 10.1016/j.envres.2024.118878.
  36. Almonti V, Vernazza S, Mirata S, Tirendi S, Passalacqua M, Gualtieri AF, Di Giuseppe D, **Scarfi S**, Bassi AM. Toxicity and inflammatory potential of mineral fibres: The contribute of released soluble metals versus cell contact direct effects. *J Appl Toxicol*. 2024, 44(8): 1166-1183. doi: 10.1002/jat.4610.
  37. Bassi S, Benvenuti M, Mirata S, Di Piazza S, Salis S, Damonte G, Zotti M, **Scarfi S**. Enhanced antioxidant and anti-inflammatory activity of the extracts of *Pleurotus ostreatus* edible mushroom grown on *Lavandula angustifolia* residues. *Food Bioscience*, 2024, 60: 104382. doi: 10.1016/j.fbio.2024.104382.
  38. Gualtieri AF, Ferrari E, Rigamonti L, Ruozi B, Mirata S, Almonti V, Passalacqua M, Vernazza S, Di Valerio S, Tossetta G, Vaiasicca S, Procopio AD, Fazioli F, Marzioni D, Pugnaroni A, **Scarfi S**. Bridging the gap between toxicity and carcinogenicity of mineral fibres by connecting the fibre parameters to the key characteristics of carcinogens: A comprehensive model inspiring asbestos-induced cancer prevention strategies. *Curr Res Toxicol*, 2024, 7: 100202. Doi: 10.1016/j.crttox.2024.100202.
  39. **Scarfi S**, Almonti V, Mirata S, Passalacqua M, Vernazza S, Prakash Patel J, Brook M, Hamilton A, Kah M, Gualtieri AF. In vitro cyto- and geno-toxicity of asbestiform erionite from New Zealand. *Env Res*, 2025, 265: 120415. Doi: 10.1016/j.envres.2024.120415.
  40. Mirata S, Almonti V, Passalacqua M, Vernazza S, Bassi AM, Di Giuseppe D, Gualtieri AF, **Scarfi S**. Toxicity of size separated chrysotile fibres: the relevance of the macrophage-endothelial axis crosstalk. *Toxicology*. 2025, 511: 154032. doi: 10.1016/j.tox.2024.154032.
  41. Ballirano P, Pacella A, Mirata S, Passalacqua M, Di Carlo MC, Arrizza L, Montereali MR, **Scarfi S**. Fibrous erionite modifications following THP-1 macrophage phagocytosis: An insight into the mechanisms of interaction with biological systems. *J Hazard Mater*. 2025, 489: 137546. doi: 10.1016/j.jhazmat.2025.137546.
  42. Giordani M, Mirata S, **Scarfi S**, Passalacqua M, Fornasini L, Drava G, Meli MA, Roselli C, Mattioli M. The cytotoxic/genotoxic role of impurities in soluble minerals: The case of natural (fibrous epsomite) versus synthetic (Epsom salt) magnesium sulphate. *Sci Total Environ*. 2025, 966: 178666. doi: 10.1016/j.scitotenv.2025.178666.

#### PATENTS

- 3 National Patents: RM2005A000200 deposited 04/29/2005; TO2004A000804 deposited 11/15/2004; GE2013A000040 deposited 04/18/2013
- 3 International patents: PCT/IB2006/053669 deposited 06/10/2006; EP08161825 deposited 05/08/2008; PCT/EP2014/057966 deposited 04/17/2014

**According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV**

Genova, 23.07.2025

Signature

