Daniela Coppola

Born in Catanzaro (CZ) on 21/11/1983

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Current Position: Tecnologo III° livello, Technologist

Current Affiliation: Department of Ecosustainable Marine Biotechnology, Stazione Zoologica Anton Dohrn, Napoli (Italy)

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
University of Naples "Federico II"	B.Sc. (Laurea triennale)	2002-2005	Biotechnology for products and processes
University of Naples "Federico II"	M.Sc. (Laurea Magistrale)	2005-2007	Molecular and Industrial Biotechnology
University of Naples "Federico II"	Ph.D.	2008-2012	Biotechnological Sciences
Institute of Protein Biochemistry, CNR, Naples Italy	Fellowship	2008-2012	Hemoproteins from polar marine bacteria and fish
Institute of Protein Biochemistry, CNR, Naples Italy	Master	2012-2013	BIAM-EPI-Form-Expert in Innovative processes of biomolecular synthesis techniques applied to epigenetic
Institute of Biosciences and BioResources, CNR, Naples Italy	Postdoc	2013-2019	Oxygen-binding proteins from marine bacteria and fish; discovery of new marine bioactive molecules/ peptides for nutraceutical and

			cosmeceutical applications
Stazione Zoologica Anton Dohrn, Napoli, Italy	Tecnologo	2019-present	Biotechnological applications from marine sources

Appointments and awards

2014: Winner of Mini Grant provided by the Scientific Committee for Antarctic Research (SCAR) Antarctic Thresholds - Ecosystem Resilience and Adaptation (AnT-ERA) Programme

2014: Winner of a Short-Term Mobility Fellowship 2014, CNR

Other

Visiting Scientist and Participation to Field Expedition

April-May 2022. Participant in the SeaGMA Expedition (Tyrrhenian Sea), on board of N/O Dallaporta, in collaboration with CNR. Research Project: SeaGMA - Geochemical and Microbiological Assessment of the sea: a combed survey for abiotic/biotic resources mapping

October-November 2017. Participant in the XXXIII Italian Expedition in Antarctica 2017/20148" - Mario Zucchelli Station, Baia Terra Nova, Antarctica - in the National Antarctic Research Programme (PNRA 2016).

October-November 2014. Visiting scientist in the laboratory of Prof. R.K. Poole at the University of Sheffield - Molecular Biology and Biotechnology Department, UK.

March-May 2010. Visiting scientist in the laboratory of Prof. A. Mozzarelli and Prof. C. Viappiani at the University of Parma - Biochemistry and Molecular Biology Department, Italy.

September 2010-July 2011. Visiting scientist in the laboratory of Prof. R.K. Poole at the University of Sheffield - Molecular Biology and Biotechnology Department, UK.

August 2013. Participant in the TUNU-V expedition (East Greenland), in the Programme TUNU-MAFIG (Marine fishes of North East Greenland - diversity and adaptation), on board of R/V Helmer Hanssen in collaboration with the University of Tromsø, Norway.

December 2013-February 2014. Participant in the XXIX Italian Expedition in Antarctica 2013/2014" - Mario Zucchelli Station, Baia Terra Nova, Antarctica - in the National Antarctic Research Programme (PNRA 2013/AZ1.10).

Partecipation in International Projects

2022-2026. HORIZON-CL6-2022-CIRCBIO-01-07: BLUEREMEDIOMICS - Harnessing the marine microbiome for novel sustainable biogenics and ecosystem services. (Coord Dr R Finn, EMBL, Germany/ Dr C Bowler, CNRS, France)

2021-2025. H2020-FNR 11-2020: SECRETED - Sustainable exploitation of bio-based compounds revealed and engineered from Natural sources. (Coord Dr MS de Lara, IDENER, Spain)

2021-2025. LIFE20 2021-2025: SEDREMED - Bioremediation of contaminated sediments in coastal areas of ex-industrial sites. (Coord Dr D de Pascale, SZN, Italy)

2020-2023. ERA-Net BlueBio Cofund: BlueCC - Commercial exploitation of marine collagen and chitin from marine sources (Coord Dr. R Gjerp, Nofima, Norway)

Partecipation in National Projects

2021-2024. Progetto CRIMAC (SZN): UNALTERABLES - UNderwAter cuLTural hERitage conservation by means Anti- BiofouLing Econfriendly products. (Coord Dr D de Pascale, SZN)

2021-2024. Progetto CRIMAC (SZN): Blue-(H)ealthy - BacteriaL and virUsEs as contaminants of Emerging concern in CALabrian marine environmenTs: new tools for tHeir occurrence, distribution and dYnamics. (Coord Dr C Rizzo, SZN)

2020-2023. Fondazione con il Sud 2018-PDR-01165: MATCHER – Microbially Assisted Treatment of End-of-Life car catalysts to enHance Economic Regeneration, Recycling and Recovery of precious metals. (Coord Dr V Funari, ISMAR-CNR)

2017-2019-PNRA16_00043 "Cosmeceuticals And Nutraceuticals From Antarctic Biological REsources (CAN FARE)" (Coord Dr C Giordano, IBBR-CNR)

2014-2016-PNRA2013/AZ1.10 "Response of Antarctic notothenioids to thermal stress: an integrated molecular approach to investigate the effects of increasing temperatures in *Trematomus bernacchii* and *Chionodraco hamatus*" (Coord Prof T Patarnello, University of Padova)

2014-2016-PNRA 2013/C1.04: "TUNU Euro-Arctic Marine Fishes (TEAM-Fish): Impact of climate change on biodiversity, adaptation, contaminant bioaccumulation. Comparison with Antarctic" (Coord Dr S Corsolini, Università degli studi di Siena)

2014-2016-PNRA2013/AZ1.20 "The emergent role of new globins of Antarctic fish in the defence against oxidative and nitrosative stress" (Coord Dr C Verde, IBBR-CNR)

2011-2013-PNRA2010/A1.08 "Role of the Oxygen in the Evolution – Genes and Proteins of Polar Fishes (ROSE)" (Coord Dr E Cocca, IBBR-CNR)

Publications

List of publications of the last 10 years:

Coppola D, Lauritano C, Zazo G, Nuzzo G, Fontana A, Ianora A, Costantini M, Verde C, Giordano D (2023). Biodiversity of UV-Resistant Bacteria in Antarctic Aquatic Environments. Journal of Marine Science and Engineering, 11, 968. doi:10.3390/jmse11050968

Coppola D*, Buonocore C, Palisse M, Tedesco P, de Pascale P (2023). Exploring oceans for curative compounds: potential new antimicrobial and anti-virulence molecules against *Pseudomonas aeruginosa*. Marine Drugs, 21, 9. doi: 10.3390/md21010009

Ausuri J, Dell'Anno F, Vitale GA, Palma Esposito F, Funari V, Franci G, Galdiero M, Della Sala G, Tedesco P, **Coppola D***, de Pascale D (2022). Bioremediation of Multiple Heavy Metals Mediated by Antarctic Marine Isolated *Dietzia psychralcaliphila* JI1D. Journal of Marine Science and Engineering, 10, 1669. doi:10.3390/jmse10111669

Dell'Anno F, Vitale GA, Buonocore C, Vitale L, Palma Esposito F, **Coppola D,** Della Sala G, Tedesco P, de Pascale D (2022). Novel Insights on Pyoverdine: From Biosynthesis to

Biotechnological Application. International Journal of Molecular Sciences, 23, 11507. doi:10.3390/ijms231911507

Coppola D, Verde C, Giordano D (2022). Isolation of UV-Resistant Marine Bacteria by UV-C Assays. Methods Mol Biol, 2498:293-305. doi: 10.1007/978-1-0716-2313-8_15

Della Sala G, **Coppola D**, Virgili R, Vitale GA, Tanduo V, Teta R, Crocetta F, de Pascale D (2022). Untargeted metabolomics yields insights into the lipidome of *Botrylloides niger* Herdman, 1886, an ascidian invading the Mediterranean Sea. Frontiers in Marine Science, 9, 865751. doi:10.3389/fmars.2022.865751

Palma Esposito F, Giugliano R, Della Sala G, Vitale GA, Buonocore C, Ausuri J, Galasso C, **Coppola D**, Franci G, Galdiero M, de Pascale D (2021). Combining OSMAC Approach and Untargeted Metabolomics for the Identification of New Glycolipids with Potent Antiviral Activity Produced by a Marine *Rhodococcus*. International Journal of Molecular Science, 22, 9055. doi: 10.3390/ijms22169055

Riccio G, Nuzzo G, Zazo G, **Coppola D**, Senese G, Romano L, Costantini M, Ruocco N, Bertolino M, Fontana A, Ianora A, Verde C, Giordano D, Lauritano C (2021). Bioactivity Screening of Antarctic Sponges Reveals Anticancer Activity and Potential Cell Death via Ferroptosis by Mycalols. Marine Drugs, 19, 459. doi: 10.3390/md19080459

Ausuri J, Vitale GA, **Coppola D**, Palma Esposito F, Buonocore C, de Pascale D (2021). Assessment of the Degradation Potential and Genomic Insights towards Phenanthrene by *Dietzia psychralcaliphila* JI1D. Microorganisms, 9, 1327. doi: 10.3390/microorganisms9061327

Ruocco N, Esposito R, Bertolino M, Zazo G, Sonnessa M, Andreani F, **Coppola D**, Giordano D, Nuzzo G, Lauritano C, Fontana A, Ianora A, Verde C, Costantini M (2021). A metataxonomic approach reveals diversified bacterial communities in antarctic sponges. Marine Drugs, 19, 173. doi: 10.3390/md19030173

Funari V, Gomes HI, **Coppola D**, Vitale GA, Dinelli E, de Pascale D, Rovere M (2021). Opportunities and threats of selenium supply from unconventional and low-grade ores: A critical review. Resources, Conservation and Recycling, 170, 105593. doi:10.1016/j.resconrec.2021.105593

Coppola D, Lauritano C, Palma Esposito F, Riccio G, Rizzo C, de Pascale D (2021). Fish waste: from problem to valuable resource. Marine Drugs, 19, 116. doi: 10.3390/md19020116

Giordano D, Corti P, **Coppola D**, Altomonte G, Xue J, Russo R, di Prisco G, Verde C (2021). Regulation of globin expression in Antarctic fish under thermal and hypoxic stress. Marine Genomics, 100831. doi: 10.1016/j.margen.2020.100831

di prisco G, Ademollo N, Ancora S, Christiansen JS, **Coppola D**, Corsolini S, Ferrando S, Ghigliotti L, Giordano D, Lynghammar A, Nielsen J, Pisano E, Russo R, Steffensen JF, Verde C (2020). Physiological traits of the Greenland shark *Somniosus microcephalus* obtained during the TUNU-Expeditions to Northeast Greenland. Life in Extreme Environments: Insights in Biological Capability, 11-41.

Coppola D, Oliviero M, Vitale GA, Lauritano C, D'Ambra I, Iannace S, de Pascale D (2020). Marine collagen from alternative and sustainable sources: extraction, processing and applications. Marine Drugs, 18, 214. doi: 10.3390/md18040214

Vitale GA, **Coppola D**, Palma Esposito F, Buonocore C, Ausuri J, Tortorella E, de Pascale D (2020). Antioxidant Molecules from Marine Fungi: Methodologies and Perspectives. Antioxidants, 9, 1183. doi: 10.3390/antiox9121183

Riccio G, Ruocco N, Mutalipassi M, Costantini M, Zupo V, **Coppola D**, de Pascale D, Lauritano C (2020). Ten-Year Research Update Review: Antiviral Activities from Marine Organisms. Biomolecules, 10, 1007. doi: 10.3390/biom10071007

Daane JM, Giordano D, **Coppola D**, di Prisco G, Detrich HWIII, Verde C (2020). Adaptations to environmental change: globin superfamily evolution in Antarctic fishes. Marine genomics, 49, 100724. doi: 10.1016/j.margen.2019.100724

Bruno S, **Coppola D**, di Prisco G, Giordano D, Verde C (2019). Enzymes from marine polar regions and their biotechnological applications. Marine Drugs, 17, 544. doi: 10.3390/md17100544

Giordano D, Costantini M, **Coppola D**, Lauritano C, Núñez Pons L, Ruocco N, di Prisco G, Ianora A, Verde C (2018). Biotechnological applications of bioactive peptides from marine sources. Advances in Microbial Physiology, 73: 171-220. doi: 10.1016/bs.ampbs.2018.05.002

Coppola D, Giordano D, Milazzo L, Howes BD, Ascenzi P, di Prisco G, Smulevich G, Poole RK, Verde C (2018). Coexistence of multiple globin genes conferring protection against nitrosative stress to the Antarctic bacterium *Pseudoalteromonas haloplanktis* TAC125. Nitric Oxide, 73, 39-51. doi: 10.1016/j.niox.2017.12.006

Feis A, Howes BD, Milazzo L, **Coppola D**, Smulevich G (2018). Structural determinants of ligand binding in truncated hemoglobins: resonance Raman spectroscopy of the native states and their carbon monoxide and hydroxide complexes. Biopolymers, e23114. doi: 10.1002/bip.23114

Giordano D, **Coppola D**, Russo R, di Prisco G, Denaro R, Giuliano L, Lauro F, Verde C (2015). Marine microbial secondary metabolites: pathways, evolution and physiological roles. Advances in Microbial Physiology 66: 357-428. doi: 10.1016/bs.ampbs.2015.04.001

Coppola D, Giordano D, Abbruzzetti S, Marchesani F, Balestrieri M, di Prisco G, Viappiani C, Bruno S, Verde C (2015). Functional characterisation of the haemoglobins of the migratory notothenioid fish *Dissostichus eleginoides*. Hydrobiologia, Biology of the Ross Sea 761: 315-333. doi:10.1007/s10750-015-2439-2

Giordano D, Russo R, **Coppola D**, Altomonte G, di Prisco G, Bruno S, Verde C (2015). "Cool" adaptations to cold environments: globins in Notothenioidei. Hydrobiologia, Biology of the Ross Sea 761, 313. doi:10.1007/s10750-015-2306-1.

Sattin G, Bakiu R, Tolomeo AM, **Coppola D**, Patarnello T, Santovito G (2015). Characterization and expression of a new cytoplasmic glutathione peroxidase 1 gene in the Antarctic fish Trematomus bernacchii. Hydrobiologia, Biology of the Ross Sea 761, 363-372. doi:10.1007/s10750-015-2488-6

Coppola D, Giordano D, Tinajero-Trejo M, di Prisco G, Ascenzi P, Poole RK, Verde C (2013). Antarctic bacterial hemoglobin and its role in the protection against nitrogen reactive species. Biochimica et Biophysica Acta, 1834, 1923-1931. doi: 10.1016/j.bbapap.2013.02.018

Giordano D, **Coppola D**, Russo R, Tinajero-Trejo M, di Prisco G, Lauro F, Ascenzi P, Verde C (2013). The globins of cold-adapted *Pseudoalteromonas haloplanktis* TAC125: from the structure to the physiological functions. Advances in Microbial Physiology 63, 329-389. doi: 10.1016/B978-0-12-407693-8.00008-X.

Coppola D, Abbruzzetti S, Nicoletti F, Merlino A, Gambacurta A, Giordano D, Howes BD, De Sanctis G, Vitagliano L, Bruno S, di Prisco G, Mazzarella L, Smulevich G, Coletta M, Viappiani C, Vergara A, Verde C (2012). ATP regulation of the ligand-binding properties in temperate and cold-adapted haemoglobins. X-ray structure and ligand-binding kinetics in the sub-Antarctic fish *Eleginops maclovinus*. Molecular BioSystems 8, 3295-3304. doi: 10.1039/c2mb25210d.