

## Nadia Ruocco



Born in Vallo della Lucania (Italy) on 01/05/1987

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**Current Position:** Researcher III level

### **Affiliation:**

Department of Marine Biotechnology (Bluebio), Stazione Zoologica Anton Dohrn, Amendolara (Italy)

### **Education/Training/Experience**

<b>Institute and Location</b>	<b>Degree / Function</b>	<b>Year</b>	<b>Field of Study</b>
Department of Organic Chemistry, Federico II University of Naples, Italy	Bachelor's degree	2010	Analysis of chondroitin sulfate strains extracted by <i>Raja bochyura</i> and <i>Torpedo nobiliana</i>
Department of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Naples, Italy	Master's degree	2014	Stress effects induced by polyunsaturated aldehydes in the sea urchin <i>Paracentrotus lividus</i>
Department of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Naples, Italy	Scholarship	2015	Secondary metabolites from marine organisms: stress and biologically active compounds
Department of Marine Biotechnology (Bluebio), Stazione Zoologica Anton Dohrn, Naples, Italy	Ph. D.	2015-2018	Toxicogenic effects of benthic diatoms upon grazing activity of the sea urchin <i>Paracentrotus lividus</i>
Department of Marine Biotechnology (Bluebio), Stazione Zoologica Anton Dohrn, Naples, Italy	Scholarship	2019	Morphological and molecular effects of sea urchin exposure to marine sediments from Bagnoli-Coroglio area
Department of Marine Biotechnology (Bluebio), Stazione Zoologica Anton Dohrn, Naples, Italy	Fellowship	2019-2021	Identification of the biological and molecular activity from marine sponge extracts
Department of Marine Biotechnology (Bluebio), Stazione Zoologica Anton Dohrn, Amendolara, Italy	Researcher III level	2021-present	Marine biotechnology, ecotoxicology and marine molecular ecology

## **Publications**

- 1) Varrella, S., Romano, G., Ianora, A., Bentley, M.G., Ruocco, N., Costantini, M. (2014) Molecular response to toxic diatom-derived aldehydes in the sea urchin *Paracentrotus lividus*. *Marine Drugs*;12: 2089-2113.
- 2) Varrella, S., Romano, G., Costantini, S., Ruocco, N., Ianora, A., Bentley, M. G., Costantini, M. (2016a) Toxic diatom aldehydes affect defence gene networks in sea urchins. *PLoS One* 11, e0149734.
- 3) Varrella, S., Romano, G., Ruocco, N., Ianora, A., Bentley, M.G., Costantini, M. (2016b) First morphological and molecular evidence of the negative impact of diatom-derived hydroxyacids on the sea urchin *Paracentrotus lividus*. *Toxicological Sciences* 151, 419-433.
- 4) Ruocco, N., Costantini, S., Guariniello, S., Costantini, M. (2016a) Polysaccharides from the marine environment with pharmacological, cosmeceutical and nutraceutical potential. *Molecules* 21, 551.
- 5) Ruocco, N., Varrella, S., Romano, G., Ianora, A., Bentley, M.G., Somma, D., Leonardi, A., Mellone, S., Zuppa, A., Costantini, M. (2016b) Diatom-derived oxylipins induce cell death in sea urchin embryos activating *caspase-8* and *caspase 3/7*. *Aquatic Toxicology* 176, 128-140.
- 6) Ruocco, N., Costantini, S., Costantini, M. (2016c) Blue-print autophagy: potential for cancer treatment. *Marine Drugs* 14, 138.
- 7) Ruocco, N., Costantini, M., Santella, L. (2016d) New insights into negative effects of lithium on sea urchin *Paracentrotus lividus* embryos. *Scientific Reports* 6, 32157.
- 8) Romano, G., Costantini, M., Sansone, C., Lauritano, C., Ruocco, N., Ianora, A. (2017) Marine microorganisms as a promising and sustainable source of bioactive molecules. *Marine Environmental Research* 128, 58-69.
- 9) Ruocco, N., Costantini, S., Zupo, V., Romano, G., Ianora, A., Fontana, A., Costantini, M. (2017a) High-quality RNA extraction from the sea urchin *Paracentrotus lividus* embryos. *PLoS One* 12, e0172171.
- 10) Ruocco, N., Fedele, A.M., Costantini, S., Romano, G., Ianora, A., Costantini, M. (2017b) New intercorrelated genes targeted by diatom-derived polyunsaturated aldehydes in the sea urchin *Paracentrotus lividus*. *Ecotoxicology and Environmental Safety* 142, 355-362.
- 11) Ruocco, N., Costantini, S., Palumbo, F., Costantini, M (2017c) Marine sponges and bacteria as challenging sources of enzyme inhibitors for pharmacological applications. *Marine Drugs* 15,173.
- 12) Costantini, S., Guerriero, E., Teta, R., Capone, F., Caso, A., Sorice, A., Romano, G., Ianora, A., Ruocco, N., Budillon, A., Costantino, V., Costantini, M. (2017) Evaluating the effects of an organic extract from the Mediterranean sponge *Geodia cydonium* on human breast cancer cell lines. *International Journal of Molecular Sciences* 18, E2112.
- 13) 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, 171-219.
- 14) Ruocco, N., Costantini, S., Zupo, V., Lauritano, C., Caramiello, D., Ianora, A., Budillon, A., Romano, G., Nuzzo, G., D'Ippolito, G., Fontana, A., Costantini, M. (2018a) Toxicogenic effects of two benthic diatoms upon grazing activity of the sea urchin: morphological, metabolomic and *de novo* transcriptomic analysis. *Scientific Reports* 8, 5622.
- 15) Ruocco, N., Zupo, V., Caramiello, D., Glaviano, F., Polese, G., Albarano, L., Costantini, M. (2018b) Experimental evaluation of the feeding rate, growth and fertility of the sea urchins *Paracentrotus lividus*. *Invertebrate Reproduction and Development* 1-12.

- 16) Ruocco, N., Mutalipassi, M., Pollio, A., Costantini, S., Costantini, M., Zupo, V. (2018c) First evidence of *Halomicronema metazoicum* (Cyanobacteria) free-living on *Posidonia oceanica* leaves. PLoS One 13, e0204954.
- 17) Zupo, V., Glaviano, F., Paolucci, M., Ruocco, N., Polese, G., Di Cosmo, A., Costantini, M., Mutalipassi, M. (2018) Roe enhancement of *Paracentrotus lividus*: Nutritional effects of fresh and formulated diets. Aquaculture Nutrition 1-13.
- 18) Nuzzo, G., Gallo, C., d'Ippolito, G., Manzo, E., Ruocco, N., Russo, E., Carotenuto, Y., Costantini, M., Zupo, V., Sardo, A., Fontana, A. (2019) UPLC–MS/MS identification of sterol sulfates in marine diatoms. Marine Drugs 17, 10.
- 19) Zupo, V., Mutalipassi, M., Ruocco, N., Glaviano, F., Pollio, A., Langellotti, A.L., Romano G., Costantini, M. (2019) Distribution of toxigenic *Halomicronema* spp. in adjacent environments on the island of Ischia: comparison of strains from thermal waters and free living in *Posidonia oceanica* meadows. Toxins 11, 99.
- 20) Albarano, L., Ruocco, N., Ianora, A., Libralato, G., Manfra, L., Costantini, M. (2019) Molecular and morphological toxicity of diatom-derived hydroxyacid mixtures to sea urchin *Paracentrotus lividus* embryos. Marine Drugs 17, 144.
- 21) Ruocco, N., Annunziata, C., Ianora, A., Libralato, G., Manfra, L., Costantini, S., Costantini, M. (2019a) Toxicity of diatom-derived polyunsaturated aldehyde mixtures on sea urchin *Paracentrotus lividus* development. Scientific Reports 9, 517.
- 22) Ruocco, N., Cavaccini, V., Caramiello, D., Ianora, A., Fontana, A., Zupo, V., Costantini, M. (2019b) Noxious effects of the benthic diatoms *Cocconeis scutellum* and *Diploneis* sp. on sea urchin development: Morphological and *de novo* transcriptomic analysis. Harmful Algae 86, 64-73.
- 23) Mutalipassi, M., Mazzella, V., Romano, G., Ruocco, N., Costantini, M., Glaviano, F., Zupo, V. (2019) Growth and toxicity of *Halomicronema metazoicum* (Cyanoprokaryota, Cyanophyta) at different conditions of light, salinity and temperature. Biology Open 8, bio043604.
- 24) Morroni, L., Sartori, D., Costantini, M., Genovesi, L., Magliocco, T., Ruocco, N., Buttino, I. (2019) First molecular evidence of the toxicogenetic effects of copper on sea urchin *Paracentrotus lividus* embryo development. Water Research 160, 415-423.
- 25) Ruocco, N., Nuzzo, G., d'Ippolito, G., Manzo, E., Sardo, A., Ianora, A., Romano, G., Iuliano, A., Zupo, V., Costantini, M., Fontana, A. (2020a) Lipoxygenase pathways in diatoms: occurrence and correlation with grazer toxicity in four benthic species. Marine Drugs 18, 66.
- 26) Esposito, R., Ruocco, N., Albarano, L., Ianora, A., Manfra, L., Libralato, G., Costantini, M. (2020) Combined effects of diatom derived oxylipins on the sea urchin *Paracentrotus lividus*. International Journal of Molecular Sciences 21, 719.
- 27) Ruocco, N., Bertocci, I., Munari, M., Musco, L., Caramiello, D., Danovaro, R., Zupo, V., Costantini, M. (2020b) Morphological and molecular responses of the sea urchin *Paracentrotus lividus* to highly contaminated marine sediments: The case study of Bagnoli-Coroglio brownfield (Mediterranean Sea). Marine Environmental Research 154, 104865.
- 28) Albarano, L., Esposito, R., Ruocco, N., Costantini, M. (2020) Genome mining as new challenge in natural products discovery. Marine Drugs 18, 199.
- 29) Ruocco, N., Albarano, L., Esposito, R., Zupo, V., Costantini, M., Ianora, A. (2020c) Multiple roles of diatom-derived oxylipins within marine environments and their potential biotechnological applications. Marine Drugs 18, 342.
- 30) 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.

- 31) Zupo, V., Scibelli, S., Mutalipassi, M., Ruocco, N., Esposito, F., Macina, A., Polese, G., Di Cosmo, A., Costantini, M. (2020) Coupling feeding activity, growth rates and molecular data shows dietetic needs of *Ciona robusta* (Ascidiacea, Phlebobranchia) in automatic culture plants. *Scientific Reports* 10, 11295.
- 32) 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.
- 33) Glaviano, F., Ruocco, N., Somma, E., De Rosa, G., Catapani, V., Ametrano, P., Caramiello, D., Costantini, M., Zupo, V. (2021) Two benthic diatoms, *Nanofrustulum shiloi* and *Striatella unipunctata*, encapsulated in alginate beads, influence the reproductive efficiency of *Paracentrotus lividus* by modulating the gene expression. *Marine Drugs* 19, 230.
- 34) Mutalipassi, M., Esposito, R., Ruocco, N., Viel, T., Costantini, M., Zupo, V. (2021) Bioactive compounds of nutraceutical value from fishery and aquaculture discards. *Foods* 10, 1495.
- 35) Esposito, R., Ruocco, N., Viel, T., Federico, S., Zupo, V., Costantini, M. (2021) Sponges and their symbionts as a source of valuable compounds in cosmeceutical field. *Marine drugs* 19, 444.
- 36) 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.