

Alessandra Gallo



Born in Napoli (Italy) on 01/09/1984

Tel.: +39 081 5833233

Fax: +39 081 7641355

e-mail: alessandra.gallo@szn.it

Skype: alexia-gal

Researcher unique identifier: ORCID: 0000-0002-2558-4722

Current Position: Researcher III Level T.I.

Current Affiliation:

Department of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Napoli (Italy)

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
University of Naples “Federico II”, Napoli, Italy	Bachelor, with Laude	2003-2007	Biological Sciences
University of Naples “Federico II”, Napoli, Italy	Master, with Laude	2007-2009	Biology
University of Naples “Federico II”, Napoli, Italy	PhD	2010-2013	Model Organisms in Biomedical and Veterinary Research
Campus vétérinaire de Lyon, France	Visiting Scientist	2013	Biotechnologies of reproduction
Department of Pharmacology, Vanderbilt University, Nashville, Tennessee (USA)	Visiting Scientist	2013	Electrophysiology
Department of Biology, University of Naples “Federico II”, Napoli, Italy	Postdoc	2014	Assessment of the environmental health state through eco-toxicological tests on reproductive events of bioindicator organisms

Stazione Zoologica Anton Dohrn, Napoli, Italy	Postdoc	2015-2019	Impact of environmental stress on reproductive processes of marine invertebrates
Stazione Zoologica Anton Dohrn, Napoli, Italy	Researcher	2019-present	Assessment of environmental stressors on reproduction and development of marine invertebrates.

Appointments and awards

2014 Member of the scientific and organizing committee of the Workshop “Inquinamento Biologico e Sostenibilità delle Risorse Marine”. 14 April, Gaeta, Italy.

2016 Aldo Fasolo Prize for best young researcher awarded by SZN.

2017 International post-doc awards for attending and presenting at the International Congress on Invertebrate Reproduction and Development.

2019 Coordinator of the First International Summer School on Marine Ecotoxicology, 1-5 July, Stazione Zoologica Anton Dohrn, Naples, Italy.

2021 National Scientific Qualification (ASN) for positions of Associate Professor SC: 05/B2.

2022 Member of the local organizing committee of the 32nd Congress of the European Society for Comparative Biochemistry and Physiology, 28-31 August, Stazione Zoologica Anton Dohrn, Naples, Italy.

2022 Coordinator of the Second International Summer School on Marine Ecotoxicology, 12-16 September, Stazione Zoologica Anton Dohrn, Naples, Italy.

Other

- Associated Investigator PRIN project “Impact of microplastics and associated contaminants on reproduction and development: a comparative and multidisciplinary study on mechanisms of action and protective strategies” funded by the Italian Ministry of University and Research, 2022-2025

- Participant in the following research granted project:

2018 flagship research program “New model organisms for the scientific research: culture, ecology, physiology and genomic characterization”

2017-2020 “Environmental restoration and balneability of the Bagnoli-Coroglio coastal area, site of national interest” funded by the Italian Ministry of University and Research

2014-2016 PRIN project “The “systems biology” in the study of xenobiotic effects on marine organisms for evaluation of the environmental health status: biotechnological applications for potential recovery strategies” funded by the Italian Ministry of

University and Research

- Supervisor of 1 PhD student (The Open University-Stazione Zoologica Anton Dohrn), 1 postdoc fellowship and 2 internship students
- Tutor of 5 Master's and 8 Bachelor's theses
- Associate Editor for the ISI journal *Frontiers in Marine Science*
- Review Editor of the ISI journals *Frontiers in Cell and Developmental Biology* and *Marine Drugs*
- Guest Editor for the Special Issue "Effects of ecosystem degradation and environmental stress on reproduction and development" in the ISI journal "Molecular Reproduction and Development", July 2018- February 2019.
- Guest Editor for the Special Issue "Marine Drugs and Ion Channels" in the ISI journal *Marine Drugs*, September 2016-March 2017.
- Reviewer for the research-funding organisation Israel Science Foundation
- Invited Speaker at the following conferences:
 - International Conference on Ecohealth and Environmental Sustainability, 24-26 February 2020, India; Reprotoxicity induced by environmental stressors on marine invertebrates
 - 14th International Congress on Invertebrate Reproduction and Development, 28 August-2 September 2017, Napoli-Firenze; Reprotoxicity induced by chemo-physical stressors in marine invertebrates
 - 2nd International Conference on Biotechnology and Environmental Safety, 6-8 May 2014, National Research Centre, Cairo, Egypt; Harbour biosecurity: fouling harbour assessment and reproductive health
 - Environment emergency: ecotoxicology as a management tool. 6a Edition. Research and application of ecotoxicological methodologies in aquatic environments and contaminated matrices, 11-13 November 2014, Livorno, Italy. "Reproduction of ascidians as a model for toxicological studies"

Publications

Author of: 38 publications in ISI journals, 6 editorials, 2 book chapters and 1 encyclopedia chapter.

List of publications of the last 10 years:

Gallo A, Esposito MC, Boni R, Tosti E. 2022. Oocyte quality assessment in marine invertebrates: a novel approach by fluorescence spectroscopy. *Biological Research* 55(1):1-10.

Gallo A. 2022. Reprotoxic Impact of Environment, Diet, and Behavior. *International Journal of Environmental Research and Public Health* 19 (3), 1303.

Boni R, **Gallo A**, Tosti E. 2022. Electrophysiology and Fluorescence Spectroscopy Approaches for Evaluating Gamete and Embryo Functionality in Animals and Humans. *Biomolecules* 12(11):1685.

Tosti E, Boni R, **Gallo A**. 2022. Pathophysiological Responses to Conotoxin Modulation of Voltage-Gated Ion Currents. *Marine Drugs* 20(5):282.

Esposito MC, Corsi I, Russo GL, Punta C, Tosti E, **Gallo A**. 2021. The Era of Nanomaterials: A Safe Solution or a Risk for Marine Environmental Pollution?. *Biomolecules* 11(3):441.

Gallo A, Esposito MC, Tosti E, Boni R. 2021. Sperm motility, oxidative status, and mitochondrial activity: exploring correlation in different species. *Antioxidants* 10(7):1131.

Gallo A, Boni R, Tosti E. 2020. Gamete quality in a multistressor environment. *Environment International* 138: 105627.

Gallo A, Boni R, Tosti E. 2020. Neurobiological activity of conotoxins via sodium channel modulation. *Toxicon* 187:47-56.

Gallo A, Esposito MC, Cuccaro A, Buia MC, Tarallo A, Monfrecola V, Tosti E, Boni R. 2020. Adult exposure to acidified seawater influences sperm physiology in *Mytilus galloprovincialis*: Laboratory and in situ transplant experiments. *Environmental Pollution* 265:115063.

Gallo A, Guida M, Armiento G, Siciliano A, Mormile N, Carraturo F, Pellegrini D, Morroni L, Tosti E, Ferrante MI, Montresor M, Molisso F, Sacchi M, Danovaro R, Lofrano G, Libralato G. 2020. Species-specific sensitivity of three microalgae to sediment elutriates. *Marine Environmental Research* 156: 104901.

Esposito MC, Boni R, Cuccaro A, Tosti E, **Gallo A**. 2020. Sperm Motility Impairment in Free Spawning Invertebrates under Near-Future Level of Ocean Acidification: Uncovering the Mechanism. *Frontiers in Marine Science* 6:794.

Carotenuto Y, Vitiello V, **Gallo A**, Libralato G, Trifuoggi M, Toscanesi M, Lofrano G, Esposito F, Buttino I. 2020. Assessment of the relative sensitivity of the copepods *Acartia tonsa* and *Acartia clausi* exposed to sediment-derived elutriates from the Bagnoli-Coroglio industrial area. *Marine Environmental Research* 155: 104878.

Chiarore A, Musco L, Bertocci I, **Gallo A**, Cannavacciuolo A, Mutalipassi M, Caramiello D, Giomi F, Fusi M, Danovaro R, Munari M. 2020. Sea urchin chronicles. The effect of oxygen super-saturation and marine polluted sediments from Bagnoli-Coroglio Bay on different life stages of the sea urchin *Paracentrotus lividus*. *Marine Environmental Research* 159: 104967.

Morroni L, d'Errico G, Sacchi M, Molisso F, Armiento G, Chiavarini S, Rimauro J, Guida M, Siciliano A, Ceparano M, Aliberti F, Tosti E, **Gallo A**, Libralato G, Patti FP, Gorbi S, Fattorini D, Nardi A, Di Carlo M, Mezzelani M, Benedetti M, Pellegrini D, Musco L, Danovaro R, Dell'Anno A, Regoli F. 2020. Integrated characterization and risk management of marine sediments: The case study of the

industrialized Bagnoli area (Naples, Italy). *Marine Environmental Research* 160: 104984.

Pelusi A, Rotolo F, **Gallo A**, Ferrante MI, Montresor M. 2020. Effects of elutriates from contaminated coastal sediments on different life cycle phases of planktonic diatoms. *Marine Environmental Research* 155: 104890.

Gallo A and Tosti, E., 2019. Effects of ecosystem stress on reproduction and development. *Molecular Reproduction and Development*, 86(10): 1269-1272.

Gallo A, Boni R, Buia MC, Monfrecola V, Esposito MC, Tosti E. 2019. Ocean acidification impact on ascidian *Ciona robusta* spermatozoa: New evidence for stress resilience. *Science of the Total Environment* 697:134100.

Di Fiore MM, Boni R, Santillo A, Falvo S, **Gallo A**, Esposito S, Baccari GC. 2019. D-Aspartic Acid in Vertebrate Reproduction: Animal Models and Experimental Designs. *Biomolecules* 9(9):445.

Gallo A, Boni R, Tosti E. 2018. Sperm viability assessment in marine invertebrates by fluorescent staining and spectrofluorimetry: A promising tool for assessing marine pollution impact. *Ecotoxicology and Environmental Safety* 147, 407-412.

Gallo A, Menezo Y, Dale B, Coppola G, Dattilo M, Tosti E, Boni R. (2018). Metabolic enhancers supporting 1 carbon cycle affect sperm functionality: an in vitro comparative study. *Scientific reports*, 8(1), 11769.

Gallo A, Manfra L, Boni R, Rotini A, Migliore L, Tosti, E. (2018). Cytotoxicity and genotoxicity of CuO nanoparticles in sea urchin spermatozoa through oxidative stress. *Environment International* 118, 325-333.

Gallo A. (2018). Toxicity of marine pollutants on the ascidian oocyte physiology: an electrophysiological approach. *Zygote* 26, 14-23.

Rotini A, **Gallo A**, Parlapiano I, Berducci M. T., Boni, R., Tosti, E., Prato E., Maggio C., Cicero A.M., Migliore L., Manfra, L. (2018). Insights into the CuO nanoparticle ecotoxicity with suitable marine model species. *Ecotoxicology and Environmental Safety*, 147, 852-860.

Gallo A, Boni R, Tosti E. 2017. μ -Conotoxins Modulating Sodium Currents in Pain Perception and Transmission: A Therapeutic Potential. *Marine Drugs* 15 (10), 295. Cover dedicated

Gallo A, Boni R, Buttino I, Tosti E. 2016. Spermotoxicity of nickel nanoparticles in the marine invertebrate *Ciona intestinalis* (ascidians). *Nanotoxicology* 10(8): 1096–1104.

Tosti E, Boni R, **Gallo A**. 2016. Ion currents in embryo development. *Birth Defects Research Part C: Embryo Today* 108:6-18.

Boni R, **Gallo A**, Cecchini S. 2016. Kinetic activity, membrane mitochondrial potential, lipid

peroxidation, intracellular pH and calcium of frozen/thawed bovine spermatozoa treated with metabolic enhancers. *Andrology* 5(1): 133-145.

Boni R, **Gallo A**, Montanino M, Macina A, Tosti E. 2016. Dynamic changes of sperm quality in *Mytilus galloprovincialis* under continuous thermal stress. *Molecular Reproduction and Development* 83:162–173.

Gallo A, Tosti E. 2015. Reprotoxicity of the antifoulant chlorothalonil in ascidians: An Ecological Risk Assessment. *PlosOne*, 10(4): e0123074.

Gallo A, Tosti E. 2015. Ion currents involved in gamete physiology. *The International Journal of Developmental Biology* 59:261-270.

Bezzaouia A*, **Gallo A***, Silvestre F, Tekaya S, Tosti E. 2014. Distribution pattern and activity of mitochondria during oocyte growth and maturation in the ascidian *Styela plicata*. *Zygote*, 22(04): 462-469. *These authors contributed equally to this work.

Gallo A, Russo GL, Tosti E. T-type Ca²⁺ current activity during oocyte growth and maturation in the ascidian *Styela plicata*. 2013. *PlosOne* 8(1): 54e604.

Gallo A, Tosti E. 2013. Adverse effect of antifouling compounds on the reproductive mechanisms of the ascidian *Ciona intestinalis*. *Marine Drugs* 11: 3554-3568.

Tosti E, Boni R, **Gallo A**, Silvestre F. 2013. Ion currents modulating oocyte maturation in animals. *Systems Biology in Reproductive Medicine* 59(2): 61-68.

Gallo A, Costantini M. 2012. Glycobiology of reproductive processes in marine animals: the state of the art. *Marine Drugs* 10(12): 2861-2892.

Book/Encyclopedia chapters

Gallo A and Tosti E. (2015). Cytoskeletal elements and the reproductive success in animals. In: Schatten H, Ed. *The cytoskeleton in health and disease*. New York: Springer Science + Business Media LLC; Chapter 6, pp. 147-166. ISBN 978-1-4939-2904-7.

Gallo A. (2016). Marine Glycoconjugates in gamete physiology and fertilization. In: Se-Kwon Kim, Ed. *Marine Glycobiology: Principles and Applications*. Boca Raton USA: CRC Press, Taylor & Francis Group; Chapter 3; pp 25-37. ISBN 9781498709613.

Gallo A, Tosti E. 2020. Reproductive Processes of Marine Animals as Biomarker for Environmental Stress Impact. In: Se-Kwon Kim editor, *Encyclopedia of Marine Biotechnology*. Chapter 146, pp. 3283-3298, John Wiley & Sons, Ltd, Print ISBN: 9781119143772; Online ISBN: 9781119143802. <https://doi.org/10.1002/9781119143802>.

Websites or online articles

Gallo A, Boni R, Tosti E. (2018). Discriminating live and dead sperm in ecotoxicology. *Atlas of*

Science. <https://atlasofscience.org/discriminating-live-and-dead-sperm-in-ecotoxicology/>.

Tosti E, Boni R, Gallo A. (2017). Gamete activation: what else?. Atlas of Science. <https://atlasofscience.org/gamete-activation-what-else/>.

Conference Proceedings

Guerriero G, Gallo A, Roselli CE, D'Angelo R, Ciarcia G. 2015. Reproductive health assessment and quantitative real-time PCR analysis of estrogen receptor mRNA expression in *Mytilus galloprovincialis* gametes. *Experimental and Clinical Endocrinology & Diabetes*, 123: LB_02.

Gallo A & Tosti E. 2014. Reproduction of ascidians as a model for toxicological studies. *Atti delle Giornate di Studio "EMERGENZA AMBIENTE: L'ECOTOSSICOLOGIA COME STRUMENTO DI GESTIONE. 6° edizione, ISPRA, Livorno, pp 46-51.*

Guerriero G, Trocchia S, Rabbito D, Petrella M, Gallo A, Madonna A, Ciarcia G. 2014. Barcoding di alcuni pesci del tirreno centrale (golfo di Gaeta). *Biologia Marina Mediterranea*, volume 21(1) p. 121-122.

Publications in non ISI journals

Tosti E, Boni R, Gallo A. 2017. Gamete activation: what else? *Atlas of Science* 1-3.

Gallo A, Tosti E. 2016A. *La Ciona intestinalis* (ascidie) come organismo modello indicatore di inquinamento marino. *Biologi Italiani*, volume 2, pp: 34-38.

Madonna A, Alwany MA, Rabbito D, Trocchia S, Labar S, Abdel-Gawad F, D'Angelo R, Gallo A, Guerriero G, Ciarcia G. 2015. Caves Biodiversity in the Marine Area of Riviera d'Ulisse Regional Park, Italy: Grotta del Maresciallo Overview. *Journal of Biodiversity & Endangered Species* 3:153.

Editorials

Gallo A, Tosti E. 2016. Adverse Effect of Ocean Acidification on Marine Organisms. *Journal of Marine Science Research and Development* 6:2.

Gallo A, Tosti E. 2016. New Markers for the Assessment of Sperm Quality. *Journal of Fertilization: In Vitro - IVF-Worldwide, Reproductive Medicine, Genetics & Stem Cell Biology* 4:4.

Gallo A and Tosti E. 2015. Antifouling Compounds Endangering Marine Invertebrates Reproduction. *Journal of Marine Science Research and Development* 5: e133.

Gallo A, Tosti E. 2015. The ascidian *Ciona intestinalis* as a model for ecotoxicological bioassays. *Journal of Marine Science Research and Development* 5:3.

Tosti E, Costantini M, Gallo A. 2013. Is the Sea an Eldorado for Bioactive Substances? *Journal of Marine Science Research and Development* 2:5.

Tosti E and Gallo A. 2012. Best biomarker and bioindicator for marine environmental pollution. *Journal of Marine Science Research and Development* 2:2.