

Effects of environmental stress on the quality of gametes and the reproductive functions of marine invertebrates

(in collaboration with Stazione Zoologica Anton Dohrn, SZN, Napoli)

The effects of potential climate change (global warming, ocean acidification) and industrial pollution on the reproductive functionality of marine animals used as bioindicators (Ascidians, Mussels and Sea urchins) were evaluated.

Recent fundings

PRIN 2020. Impact of microplastics and associated contaminants on reproduction and development: a comparative and multidisciplinary study on mechanisms of action and protective strategies. (Coordinatore scientifico: Sergio Minucci (Unicampania), Responsabile scientifico: Alessandra Gallo (SZN))

Recent papers

- Gallo A, Esposito MC, Tosti E, **Boni R**. Sperm motility, oxidative status, and mitochondrial activity: Exploring correlation in different species. *Antioxidants*, 2021, 10(7), 1131.
- Gallo A, Esposito MC, Cuccaro A, Buia MC, Tarallo A, Monfrecola V, Tosti E, **Boni R**. Adult exposure to acidified seawater influences sperm physiology in *Mytilus galloprovincialis*: Laboratory and in situ transplant experiments. *Environmental Pollution*, 2020, 265, 115063.
- Gallo A, **Boni R**, Tosti E. Gamete quality in a multistressor environment. *Environment International*, 2020, 138, 105627.
- Esposito MC, **Boni R**, Cuccaro A, Tosti E, Gallo A. Sperm Motility Impairment in Free Spawning Invertebrates Under Near-Future Level of Ocean Acidification: Uncovering the Mechanism. *Frontiers in Marine Science*, 2020, 6, 794.
- Gallo A, **Boni R**, Buia MC, Monfrecola V, Esposito MC, Tosti E. Ocean acidification impact on ascidian *Ciona robusta* spermatozoa: New evidence for stress resilience. *Science of the Total Environment*, 2019, 697, 134100.
- **Boni R**. Heat stress, a serious threat to reproductive function in animals and humans. *Molecular Reproduction and Development*, 2019, 86(10), 1307–1323.
- Gallo A, Manfra L, **Boni R**, Rotini A, Migliore L, Tosti E. Cytotoxicity and genotoxicity of CuO nanoparticles in sea urchin spermatozoa through oxidative stress. *Environment International*, 2018, 118, 325–333.
- Rotini A, Gallo A, Parlapiano I, Berducci MT, **Boni R**, Tosti E, Prato E, Maggi C, Cicero AM, Migliore L, Manfra L. Insights into the CuO nanoparticle ecotoxicity with suitable marine model species. *Ecotoxicology and Environmental Safety*, 2018, 147, 852–860.
- Gallo A, **Boni R**, Tosti E. Sperm viability assessment in marine invertebrates by fluorescent staining and spectrofluorimetry: A promising tool for assessing marine pollution impact. *Ecotoxicology and Environmental Safety*, 2018, 147, 407–412.
- Gallo A, **Boni R**, Buttino I, Tosti E. Spermotoxicity of nickel nanoparticles in the marine invertebrate *Ciona intestinalis* (ascidians). *Nanotoxicology*, 2016, 10(8), 1096–1104.
- **Boni R**, Gallo A, Montanino M, Macina A, Tosti E. Dynamic changes in the sperm quality of *Mytilus galloprovincialis* under continuous thermal stress. *Molecular Reproduction and Development*, 2016, 83(2), 162–173.