Monia T. Russo

e-mail monia.russo@szn.it
Skype: *moniateresarusso*
ORCID: 0000-0002-8102-018
Scopus Author ID: 8045545800
https://scholar.google.com/citations?user=0tYfF-QAAAAJ&hl=it

Current Position: Researcher
Current Affiliation: Department of Ecosustainable Marine Biotechnology, Stazione Zoologica Anton Dohrn

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
Department of Developmental and Molecular Biology, Stazione Zoologica A. Dohrn, Napoli, Italy	Master (Laurea)	1998-2000	Biological sciences
Department of Developmental and Molecular Biology, Stazione Zoologica A. Dohrn, Napoli, Italy	PhD	2000-2005	Molecular genetics of development and differentiation
Department of Developmental and Molecular Biology, Stazione Zoologica A. Dohrn, Napoli, Italy	Postdoc	2006-2008	Nervous system development in ascidians
Department of Biochemistry e Medical Biotechnologies CEINGE Biotecnologie Avanzate, Napoli, Italy	Postdoc	2009	Regulation of gene expression in development and skin diseases
Integrative Marine Ecology Department Stazione Zoologica A. Dohrn Napoli, Italy	Postdoc	2010-2019	Genetics, molecular biology and mutagenesis in marine algae
Department of Research Infrastructures for marine biological resources Stazione Zoologica A. Dohrn Napoli, Italy	Technical collaborator	2019-2023	Molecular biology, gene expression and mutagenesis
Department of Ecosustainable Marine Biotechnology, Stazione Zoologica Anton Dohrn, Naples, Italy	Researcher	2023-present	Diatom functional genomics and synthetic biology

Peer-reviewed publications

1. Santin A., **Russo M.T.**, de Los Ríos LM, Chiurazzi M, d'Alcalà MR, Lacombe B, Ferrante MI, Rogato A. (2024). The tonoplast localized protein PtNPF1 participates in the regulation of nitrogen response in diatoms. New Phytologist 41:1592-1604. doi: 10.1111/nph.19461.
2. **Russo, M.T.**, Rogato, A., Jaubert, M., Karas, B.J., Falciatore, A. (2023). *Phaeodactylum tricornutum*: An established model species for diatom molecular research and an emerging chassis for algal synthetic biology. Journal of Phycology 59:1114-1122. doi: 10.1111/jpy.13400
3. **Russo, M.T.**, Santin, A., Zuccarotto, A., Leone, S., Palumbo, A., Ferrante, M.I., Castellano, I. (2023). The first genetic engineered system for ovothiol biosynthesis in diatoms reveals a mitochondrial localization for the sulfoxide synthase OvoA. Open Biology 13:220309. doi: 10.1098/rsob.220309 **Co-corresponding authorship**
4. Marotta, P., Borgonuovo, C., Santin, A., **Russo, M.T.**, Manfellotto, F., Montresor, M., De Luca, P., and Ferrante, M.I. (2022). Mate Perception and Gene Networks Regulating the Early Phase of Sex in Pseudo-nitzschia multistriata. Journal of Marine Science and Engineering 10:1941. doi: 10.3390/jmse10121941
5. **Russo, M.T.**, Santin, A., Rogato, A., and Ferrante, M.I. (2022) Optimized Proteolistic Protocol for the Delivery of the Cas9 Protein in *Phaeodactylum tricornutum*. Marine Genomics doi: 10.1007/978-1-0716-2313-8 **Co-corresponding authorship**
6. Santin, A., Balzano, S., Russo, M.T., Palma Esposito, F., Ferrante, M.I. Blasio, M., Cavalletti, E., Sardo, A. (2022). Microalgae-based PUFAs for food and feed: Current applications, future possibilities, and constraints. Journal of Marine Science and Engineering 10:844. doi: 10.3390/jmse10070844
7. Petrosino, G., Ponte, G., Volpe, M., Zarrella, I., Langella, I., Di Cristina, G., Finaurini, S., **Russo, M.T.**, Basu, S., Musacchia, F., Ristoratore, F., Pavlinic, D., Benes, V., Ferrante, M.I., Albertin, C., Simakov, O., Gustincich, S., Fiorito, G. and Sanges, R. (2022). Identification of LINE retrotransposons and long non-coding RNAs expressed in the octopus brain. BMC Biology 20:116. doi: 10.1186/s12915-022-01303-5.
8. Santin, A., **Russo, M.T.**, Ferrante, M.I., Balzano, S., Orefice, I., and Sardo, A. (2021). Highly Valuable Polyunsaturated Fatty Acids from Microalgae: Strategies to Improve Their Yields and Their Potential Exploitation in Aquaculture. Molecules 26:7697. doi: 10.3390/molecules26247697.
9. **Russo, M.T.**, Ruggiero, M.V., Manfellotto, F., Scriven, V., Campbell, L., Montresor, M., and Ferrante, M.I. (2021) New alleles in the mating type determination region of West Atlantic strains of *Pseudo-nitzschia multistriata*. Harmful Algae 103:101995 doi: 10.1016/j.hal.2021.101995. **Co-corresponding authorship**
10. Santin, A., Caputi, L., Longo, A., Chiurazzi, M., Ribera d'Alcalà, M., **Russo, M.T.**, Ferrante M.I., and Rogato, A. (2021). Integrative omics identification, evolutionary and structural analysis of low affinity nitrate transporters in diatoms, diNPFs. Open Biology 11:4 doi: 10.1098/rsob.200395.
11. Osuna-Cruz, C.M., Bilcke, G., Vancaester, E., De Decker, S., Bones, A.M., Winge, P., Poulsen, N., Bulankova, P., Verhelst, B., Audoor, S., Belisova, D., Pargana, A., **Russo, M.T.**, Stock, F., Cirri, E., Brembu, T., Pohnert, Piganeu, G., Ferrante, M.I., Mock, T., Sterck, L., Sabbe, K., De Veylder, L., Vyverman, W., Vandepoele, K. (2020). The *Seminavis robusta* genome provides insights into the evolutionary adaptations of benthic diatoms. Nature Communications 11:1-13. doi: 10.1038/s41467-020-17191-8.
12. Pargana, A., Musacchia, F., Sanges, R., **Russo, M. T.**, Ferrante, M.I., Bowler, C., Zingone, A. (2020). Intraspecific diversity in the cold stress response of transposable elements in the diatom *Leptocylindrus aporus*. Genes 11:9. doi: 10.3390/genes11010009.
13. **Russo, M.T.**, Vitale, L., Entrambasaguas, L., Anestis, K., Fattorini, N., Romano, F., Minucci, C., De Luca, P., Biffali, E., Vyverman, W., Sanges, R., Montresor, M., Ferrante, M.I. (2018). MRP3 is a sex determining gene in the diatom *Pseudo-nitzschia multistriata*. Nature Communications 9:5050. doi: 10.1038/s41467-018-07496-0.
14. **Russo, M.T.**, Aiese Cigliano, R., Sanseverino, W., Ferrante, M.I. (2018). Assessment of genomic changes in a CRISPR/Cas9 *Phaeodactylum tricornutum* mutant through whole genome resequencing. PeerJ 6:e5507. doi:10.7717/peerj.5507. **Co-corresponding authorship**

15. Kroth, P.G., Bones, A.M., Daboussi, F., Ferrante, M.I., Jaubert, M., Kolot, M., Nymark, M., Río Bártulos, C., Ritter, A., **Russo, M.T.**, Serif, M., Winge, P., Falciatore, A. (2018). Genome editing in diatoms: achievements and goals. Plant Cell Reports 37: 1401–1408. doi: 10.1007/s00299-018-2334-1.
16. Basu, S., Patil, S., Mapleson, D., **Russo, M.T.**, Vitale, L., Fevola, C., Maumus, F., Casotti, R., Mock, T., Caccamo, M., Montresor, M., Sanges, R., Ferrante, M.I. (2017). Finding a partner in the ocean: molecular and evolutionary bases of the response to sexual cues in a planktonic diatom. New Phytologist 215: 140–156. doi: 10.1111/nph.14557.
17. **Russo, M.T.**, Annunziata, R., Sanges, R., Ferrante, M.I., Falciatore, A. (2015). The upstream regulatory sequence of the light harvesting complex *Lhcf2* gene of the marine diatom *Phaeodactylum tricornutum* enhances transcription in an orientation- and distance-independent fashion. Marine Genomics 24: 69–79. doi: 10.1016/j.margen.2015.06.010. **Co-corresponding authorship**
18. Sabatino, V., **Russo, M.T.**, Patil, S., d'Ippolito, G., Fontana, A. and Ferrante, M.I. (2015). Establishment of genetic transformation in the sexually reproducing diatoms *Pseudo-nitzschia multistriata* and *Pseudo-nitzschia arenysensis* and inheritance of the transgene. Marine Biotechnology 17:452-462. **Co-first authorship**
19. **Russo, M.T.**, Racioppi, C., Zanetti, L., Ristoratore, F. (2014). Expression of a single prominin homolog in the embryo of the model chordate *Ciona intestinalis*. Gene Expression Patterns 15:38-45. doi: 10.1016/j.gep.2014.04.001.
20. Antonini, D., **Russo, M.T.**, De Rosa, L., Gorrese, M., Del Vecchio, L., and Missero, C. (2010). Transcriptional repression of miR-34 family contributes to p63-mediated cell cycle progression in epidermal cells. Journal of Investigative Dermatology. 130:1249-57. doi: 10.1038/jid.2009.438.
21. De Rosa, L., Antonini, D., Ferone, G., **Russo, M.T.**, Yu, P. B., Han, R. and Missero, C. (2009). p63 suppresses non-epidermal gene expression by direct regulation of BMP/Smad signaling. Journal of Biological Chemistry. 284 30574-82. doi: 10.1074/jbc.M109.049619.
22. Sordino, P., Andreakis, N., Brown, E. R., Leccia, N. I., Squarzoni, P., Tarallo R., Alfano, C., Caputi, L., D'Ambrosio, P., Daniele, P., D'Aniello, E., D'Aniello, S., Maiella, S., Miraglia, V., **Russo, M.T.**, Sorrenti, G., Branno, M., Cariello, L., Cirino, P., Locascio, A., Spagnuolo, A., Zanetti, L. and Ristoratore, F. (2008). Natural Variation of Model Mutant Phenotypes in *Ciona intestinalis*. PLoS ONE 3:e2344. doi: 10.1371/journal.pone.0002344.
23. Alfano, C., **Russo, M.T.**, Spagnuolo, A. (2007). Developmental expression and transcriptional regulation of Ci-Pans, a novel neural marker gene of the ascidian *Ciona intestinalis*. Gene 406 36-41. doi: 10.1016/j.gene.2007.05.026. **Co-first authorship**
24. D'Aniello, S., D'Aniello, E., Locascio, A., Memoli, A., Corrado, M., Russo, M.T., Aniello, F., Fucci, L., Brown, E. R. and Branno, M. (2006). The ascidian homologue of the vertebrate homeobox gene *Rx* is essential for ocellus development and function. Differentiation 74:222-34. doi: 10.1111/j.1432-0436.2006.00071.x.
25. **Russo, M.T.**, Donizetti, A., Locascio, A., D'Aniello, S., Amoroso, A., Aniello, F., Fucci, L., Branno, M. (2004). Regulatory Elements Controlling *Ci-msx*b Tissue Specific Expression during *Ciona intestinalis* embryonic development. Developmental Biology 267:517-18. doi: 10.1016/j.ydbio.2003.11.005.
26. Aniello, F., Villano, G., Corrado, M., Locascio, A., **Russo, M.T.**, D'Aniello, S., Fucci, L., Branno, M. (2003). Structural organization of the sea urchin DNA (cytosine-5)-methyltransferase gene and characterization of five alternative spliced transcripts. Gene 302: 1-9. doi: 10.1016/s0378-1119(02)01138-1.

Participation to research projects

SENSing. Sensing the Environment: Nitrogen handling Strategies in diatoms. PRIN (Research Projects of Relevant National Interest), Italian Ministry of Research. December 2023-November 2025.

OSCAR. Molecular mechanisms controlling algal growth, from the lab to the sea and back. PRIN (Research Projects of Relevant National Interest), Italian Ministry of Research. October 2023-October 2025.

Screening and cultivation of microalgal species of potential interest for the production of hydrogen in bioreactors. Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), under the PNRR POR H2. March 2023- February 2026.

DIsCO (Diatom life cycles, molecular controls and contribution to ecosystem dynamics), funded by the Gordon and Betty Moore Foundation's Marine Microbiology Initiative. December 2018- November 2022.

Assemble Plus (Association of European Marine Biological Research Laboratories Expanded), EU H2020 project. October 2017- September 2021.

EMBRIC (European Marine Biological Research Infrastructure Cluster to promote the Blue Bioeconomy). "Microalgae for blue biotechnological applications" June 2015- May 2019.

DiaEdit (Development of genetic tools for the establishment of routine genome editing in the marine diatom Phaeodactylum tricornutum), funded by the Gordon and Betty Moore Foundation's Marine Microbiology Initiative. November 2015- May 2018.

ASSEMBLE (Association of European Marine Biological Laboratories). Funded by FP7-INFRASTRUCTURES