

Maria Vittoria Modica



Born in Roma (Italy) on 23/07/1976

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Current Position: Research fellow – Ricercatore III livello

Affiliation: Section Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Napoli (Italy)

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
Sapienza University of Roma, Italy	Laurea – Bsc+Msc	2004	Biological Sciences
Sapienza University of Roma, Italy	Ph.D.	2008	Animal Biology
Sapienza University of Roma, Italy – Dept. BBCD	Postdoc	2008-2010	Histochemistry and biochemistry in Neogastropoda evolution
Muséum National d'Histoire Naturelle, Paris, France	Visiting curator	2009	Curation of the DNA barcode Malacological Collection
Sapienza University of Roma, Italy – Dept. BBCD	Postdoc	2010-2011	ABGD, GMYC and Klee diagrams: Phylogenetic analysis of large molecular datasets
Muséum National d'Histoire Naturelle, Paris, France	Visiting curator	2009	Curation of the DNA barcode Malacological Collection
Sapienza University of Roma, Italy – Dept. BBCD	Postdoc	2013-2015	Feeding-related gene expression in non-model invertebrates: a

			transcriptomic approach
Stazione Zoologica Anton Dohrn, Naples, Italy	Research fellow (short-term position)	2016-2017	Integrative Taxonomy
Université de Montpellier, France	Marie Curie Fellow	2017-2019	Chemical Ecology
Stazione Zoologica Anton Dohrn, Naples, Italy	Research fellow	2019-present	Phylogeny and Evolution of Marine Organisms

Appointments and awards

2008: Malacological Society of London Research Award

2008: SYNTHESYS EU grant FR-TAF-5161

2016: SYNTHESYS EU grant FR-TAF-6147

2017: Marie Skłodowska-Curie Individual Fellowship

Other

Member of the Unitas Malacologica, Italian Society of Malacology (SIM), Italian Zoological Union (UZI), European Society of Evolutionary Biology (ESEB), Italian Society of Evolutionary Biology (SIBE)

Board member of the Italian Society of Evolutionary Biology (SIBE)

Participation to oceanographic cruises in the Mediterranean, Indo-West Pacific and Tropical Eastern Pacific.

Teaching activities for the courses of Evolutionary Parasitology, Zoology, Comparative Morphology, Marine Biodiversity and Systematic Zoology at University of Roma Tre and La Sapienza University of Roma.

Lecturer in Curation of Malacological Collections for the course Methods of Conservation and Record of Naturalistic Material, Museo Civico di Zoologia, Roma

Involvement in international research projects

2008-2010: Research Assistant to the Project “Intoxicating connections: bridging the gap between the lab bench and informal science education using venomous snails”. PIs: Dr Mande Holford, Prof Baldomero Olivera – University of Utah and Smithsonian Tropical Research Institution.

2010-2013: Research Assistant to the Project “Analysis of molecular evolution and anatomy of Panamic Conoidean snails”. PI Dr Mande Holford – City University of New York and Smithsonian Tropical Research Institution.

Students' Supervision

Co-advisor of 1 PhD, 19 BSc and 7 MSc theses at Sapienza University of Rome.

Publications

Author of 35 publications on ISI-journals (h index: 11)

List of publications of the last 10 years:

Peer-reviewed

- Oliverio M., Barco A., Modica M.V., Richter A., Mariottini P. 2009. Ecological barcoding of corallivory by ITS2 sequences: hosts of coralliophiline gastropods detected by the cnidarian DNA in their stomach. *Molecular Ecology Resources* 9(1): 94-103.
- Fochetti R., Sezzi E., Tierno de Figueroa J.M., Modica M.V. and Oliverio M. 2009. Molecular systematics and biogeography of the western Mediterranean stonefly genus *Tyrrhenoleuctra* (Plecoptera, Insecta). *Journal of Zoological Systematics and Evolutionary Research*, 47(4): 328-336.
- Modica M.V., Kosyan A., Oliverio M. 2009. The relationships of the enigmatic gastropod *Tritonoharpa*: new data on early neogastropod evolution. *The Nautilus*, 123 (3): 177-188.
- Kosyan A., Modica M. V., Oliverio M. 2009. The anatomy and relationships of *Troschelia* (Buccinidae: Neogastropoda): new evidence of a closer fasciolariid-buccinid relationship. *The Nautilus*, 123 (3): 95-105.
- Oliverio M., Barco A., Richter A., Modica M.V. 2009. The coralliophiline radiation: Repeated colonizations of the deep-sea? *The Nautilus*, 123 (3): 113-120.
- Holford M., Puillandre N., Modica M.V., Watkins M., Collin R., Bermingham E., Olivera B. 2009. Correlating molecular phylogeny with venom apparatus occurrence in Panamic auger snails (Terebridae). *PLoS ONE* 4(11): e7667. doi:10.1371/journal.pone.0007667.
- Oliverio M. and Modica M.V. 2010. Relationships of the hematophagous snail *Colubraria* (Rachiglossa, Colubrariidae), within the neogastropod phylogenetic framework. *Zoological Journal of the Linnean Society* 158: 779–800. doi: 10.1111/j.1096-3642.2009.00568.x.
- Modica M.V. and Holford M. 2010. The Neogastropoda: evolutionary innovations of predatory marine snails with remarkable pharmacological potential. In: *Evolutionary Biology – Concepts, Molecular and Morphological Evolution*, Pontarotti P. ed, Springer, pp. 249-270.
- Modica M.V., Verhecken A., Oliverio M. 2011. The anatomy and relationships of the enigmatic neogastropod *Loxotaphrus*. *New Zealand Journal of Geology and Geophysics*, 54: 115-124. doi: 10.1080/00288306.2011.537610.
- Modica M.V., Bouchet P., Cruaud C., Utge J. and Oliverio M. 2011. Molecular phylogeny of the nutmeg shells (Neogastropoda, Cancellariidae). *Molecular Phylogenetics and Evolution*, 59: 685-697, doi:10.1016/j.ympev.2011.03.022.
- Cioni C., Bonaccorsi di Patti M.C., Venturini G., Modica M.V., Scarpa F., Oliverio M. and Toni M. 2012. Characterization of nitric oxide synthase activity in the nervous system of the prosobranch *Stramonita haemastoma* (Gastropoda, Neogastropoda). *Journal of Comparative Neurology* 520: 364-383. DOI 10.1002/cne.22729.
- Puillandre N., Modica M.V., Zhang Y., Sirovich L., Boisselier M.-C., Cruaud C., Holford M., Samadi S. 2012. Large-scale species delimitation method for hyperdiverse groups. *Molecular Ecology* 21(11): 2671-91, doi: 10.1111/j.1365-294X.2012.05559.x.

- Castelin M., Puillandre N., Kantor Yu.I., Modica M.V., Terryn Y., Cruaud C., Bouchet P., Holford M. 2012. Macroevolution of venom apparatus innovations in auger snails (Gastropoda; Conoidea; Terebridae). *Molecular Phylogenetics and Evolution* 64 (1): 21–44, doi: 10.1016/j.ympev.2012.03.001.
- Modica M.V., Mariottini P., Priškić J., and Oliverio M. 2013. DNA-Barcoding of three sympatric species of ectoparasitic gastropods of the genus *Cerithiopsis* (Mollusca: Gastropoda: Cerithiopsidae) from Croatia. *Journal of the Marine Biological Association UK* 93(04): 1059-1065. doi: 10.1017/S0025315412000926.
- Priškić J., Furfaro, G., Mariottini P., Carmona L., Cervera J.L. Modica M.V., and Oliverio M. 2014. First record of *Calma gobioophaga* Calado and Urgorri, 2002 (Gastropoda: Nudibranchia) in the Mediterranean Sea. *Mediterranean Marine Science*, 15: 423-428. doi: 10.12681/mms.709.
- Modica M.V., Puillandre N., Castelin M., Zhang Y., Holford M. 2014. A Good Compromise: Rapid and Robust Species Proxies for Inventorying Biodiversity Hotspots Using the Terebridae (Gastropoda: Conoidea). *PLoS ONE* 9(7): e102160. doi:10.1371/journal.pone.0102160.
- Furfaro G., Modica M.V., Oliverio M., Cervera J.L., Mariottini P. 2014. Phenotypic diversity of *Thuridilla hopei* (Vérany, 1853) (Gastropoda Heterobranchia Sacoglossa). A DNA-barcode approach. *Biodiversity Journal*, 5 (2): 117–130.
- Modica M.V. 2015. The first anatomical description of two trigonostomatine Cancellariidae, *Scalptia androyensis* and *Scalptia foveolata*. *The Italian Journal of Zoology*, 82(3): 398-403. doi: 10.1080/11250003.2015.1021391.
- Modica M.V., Lombardo F., Franchini P., Oliverio M. 2015. The venomous cocktail of the vampire snail *Colubraria reticulata*. *BMC Genomics*, 16(11): 441.
- Fassio G., Modica M.V., Alvaro M.C., Schiaparelli S., Oliverio M. 2015. Developmental trade-offs in Southern Ocean mollusk kleptoparasitic species. *Hydrobiologia*, 761: 121-141.
- Furfaro G., Modica M.V., Oliverio M., Mariottini P. 2016. A DNA-barcode approach to the phenotypic diversity of Mediterranean species of *Felimare* Ev. Marcus & Er. Marcus, 1967 (Mollusca, Gastropoda), with a preliminary phylogenetic analysis. *The Italian Journal of Zoology*, 2016:1-13. DOI: 10.1080/11250003.2016.1150525.
- Modica M.V., Colangelo P., Hallgass A., Barco A., Oliverio M. 2106. Cryptic diversity in a chirally variable land snail. *The Italian Journal of Zoology*, 1-13.
- Casoli E., Ventura D., Modica M.V., Belluscio A., Capello M., Oliverio M., Ardizzone G. 2016. A massive ingressions of the alien species *Mytilus edulis* L. (Bivalvia: Mollusca) into the Mediterranean Sea following the Costa Concordia cruise-ship disaster. *Mediterranean Marine Science*, 404-416.
- Aissaoui C., Puillandre N., Bouchet P., Modica M.V., Fassio G., Oliverio M. 2016. Cryptic diversity in Mediterranean gastropods of the genus *Aplus*, with the description of a new species (Neogastropoda, Buccinidae). *Scientia Marina*, 80(4):521-533
- Furfaro G., Mariottini P., Modica M.V., Trainito E., Doneddu M., Oliverio M. 2017. Sympatric sibling species: the case of *Caloria elegans* and *Facelina quadrefagesi*. *Scientia Marina*, 80:4

- Russini V., Fassio G., Modica M.V., DeManteinon M.J., Oliverio M. 2017. An assessment of the genus *Columbella* Lamarck, 1799 (Gastropoda: Columbellidae) from eastern Atlantic Zoosystema 39(2):197-212
- Modica M.V., Russini V., Fassio G., Oliverio M. 2017. Do larval types affect genetic connectivity at sea? Testing hypothesis in two sibling marine gastropods with contrasting larval development Marine environmental research. DOI: 10.1016/j.marenvres.2017.04.001
- Seifert B, D'eustacchio D., Kaufmann B., Centorame M., Lorite P., Modica, MV. 2017. Four species within the supercolonial ants of the *Tapinoma nigerrimum* complex revealed by integrative taxonomy (Hymenoptera: Formicidae). Myrmecological News, 24: 123-144
- Modica M.V., Ponte G. 2017. Salivary glands in predatory mollusks: evolutionary considerations. Frontiers in Physiology – Invertebrate Physiology. 8:580
- Fedosov A, Puillandre N, Herrmann M, Kantor Y, Oliverio M, Dgebuadze P, Modica MV, Bouchet P. 2017. The collapse of *Mitra*: Molecular systematics and morphology of the Mitridae (Gastropoda: Neogastropoda). The Zoological Journal of the Linnean Society, 183:253-337
- Modica M.V., Reinoso Sanchez J., Pasquadibisceglie A., Oliverio M., Mariottini P., Cervelli M. 2018. Anti-hemostatic compounds from the vampire snail *Cumia reticulata*. Molecular and in silico structure-function analysis. Computational Biology and Biochemistry, 75: 168-177.
- Gerdol M., Cervelli M., Oliverio M., Modica M.V. 2018. Piercing fishes: Porin expansion and adaptation to hematophagy in the vampire snail *Cumia reticulata*. Molecular Biology and Evolution, 35: 2654-2668.
- Gerdol M., Cervelli M., Mariottini P., Oliverio M., Dutertre S., Modica M.V. 2019. A recurrent motif: Diversity and evolution of ShKT domain containing proteins in the vampire snail Cumia reticulata. Toxins 11: 106.
- Fassio G., Modica M.V., Alvaro M.C., Buge B., Salvi D., Oliverio M., Schiaparelli S. 2019. An Antarctic flock under the Thorston's rule: Diversity and larval development of Antarctic Velutinidae (Mollusca: Gastropoda). Molecular Phylogenetics and Evolution 132:1-13.
- Modica M.V., Gorson J., Fedosov A.E., Malcolm G., Terryn Y., Puillandre N., Holford M. 2019. Macroevolutionary analyses suggest environmental factors, not venom apparatus, play key role in Terebridae marine snails diversification. Systematic Biology, in press