

Adrianna Ianora



Born in Montreal (Canada) on 1/1/1953

Tel.: +39 081 5833246

Fax: +39 081 7641355

e-mail: Adrianna.ianora@szn.it

Skype: adriannaianora

Current Position: Head of the Integrative Marine Ecology Department, Stazione Zoologica Anton Dohrn, Naples (Italy)

Education/Training/Experience

Institute	Degree/Function	Year	Field of Study
McGill University Montreal (Canada)	BSc	1975	Biological Sciences
Fellow SZN	Canadian Scholarship	1976-1978	Marine Biology
University of Naples	Laurea cum laude	1980	Scienze Naturali
University of Messina	contract	1981	copepod biology
Stazione Zoologica	contract	1982	copepod biology
Stazione Zoologica	I level Staff Scientist	1983-1992	copepod reproduction
Stazione Zoologica	II level Staff Scientist	1992-1998	chemical ecology
Stazione Zoologica	Director of Research	1998-present	chemical ecology
Head of the Functional And Evolutionary Ecology Laboratory	Stazione Zoologica	2010-2015	drug discovery
Head of the Public Aquarium and Aquariology Area	Stazione Zoologica	2014	

Appointments and awards

- 1991-2005 Editorial Board Member of the journal PSZN: Marine Ecology
- 1996-2010 Editorial Board Member of the Journal of Plankton Research
- 2007-2010 Editorial Board Member of the Open Oceanography Journal
- 2001-present Editorial Board Member of the journal Scientia Marina
- 2004-present Review Editor of the journal Marine Ecology Progress Series
- 2010-present Editorial Board Member Italian Journal of Limnology and Oceanography
- 2013-present Academic Editor for the journal PLoS ONE
- 1991-1992 Vice-President Plankton Committee CIESM (Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée)
- 1996-1999 Vice-President of WAC (World Association of Copepodologists)
- 2007-2009 Jury Member of the Ramon Margalef Prize
- 2008 Member of Sebetia-Ter International Prize
- 2004-2008 Principal Investigator of the EU Network of Excellence EUROCEAN and member of the training committee
- 2003-2009 Vice Chair for Southern Europe of the Scientific Steering Committee of the EU Network of Excellence MARBEF. Co-responsible for the Training Committee; Coordinator of the RMP Research Project ROSEMEB (Role of Secondary Metabolites in Ecosystem Biodiversity)
- 2010-2013 Vice Chair for Southern Europe of MARBEF+
- 2012-2013 Coordination Team of the EU (CSA) Coordination and Support Action for the creation of the Network EUROMARINE
- 2005-2014 Co-opted Member of the Executive Board of MARS Network of Marine Research Stations <http://www.marsnetwork.org/executive-board>
- 2014-present ERA-NET Marine Biotechnology International Advisory Group <http://www.marinebiotech.eu/>
- 2014-present Steering Committee of EUROMARINE http://www.euromarinenetwork.eu/files/SCmembers_1502.pdf

Other

- Evaluator nominated by the European Commission for several FP7 and H2020 proposals
- Evaluator for ERC proposals (Intermediate stage)

Students' Supervision

- PhD supervisor of 7 Ph.D. students (Open University and Italian) and 13 Postdoctoral researchers
- Member of national and international PhD examination panels
- Author of 105 scientific publications in ISI journals (h index: 37) and 6 book chapters; co-editor of three books on Antarctic and peri-Antarctic Ecosystems published by SpringerVerlag

Current Projects

- 1) EUROMARINE: <http://www.euromarineconsortium.eu/>
- 2) PHARMASEA recently funded European FP7 project KBBE.2012.3.2-01: Innovative marine biodiscovery pipelines for novel industrial products Coordinated by the University of Aberdeen, UK and University of Louven, Belgium <http://www.pharma-sea.eu/>

- 3) Italian National Project PON01_00117 Antigens and Adjuvants for Vaccines and Immunotherapy Coordinated by Novartis Vaccines & Diagnostics srl
http://www.ponrec.it/open-data/risultati/ricerca-industriale/pon01_00117/
- 4) Italian National Project PON 1- 02782 New nanotechnological strategies for pharmaceuticals targeting circulating metastatic cancer cells Coordinated by BIOGEM scarl
http://www.ponrec.it/open-data/risultati/ricerca-industriale/PON01_02782

List of publications of the last 10 years (2005-present):

1. Paffenhöfer G-A, Ianora A, Miralto A, Turner JT, Kleppel GS, Ribera d'Alcala M et al. Colloquium on diatom-copepod interactions. *Mar Ecol Prog Ser* 2005; 286: 293-305.
2. Casotti R, Mazza S, Brunet C, Vantrepotte V, Ianora A, Miralto A. Growth inhibition and toxicity of the algal aldehyde 2-trans-2-cis decadienal *Thalassiosira weissflogii* (Bacillariophyceae) *J Phycol* 2005; 41: 7-20.
3. Buttino I, De Rosa G, Carotenuto Y, Ianora A, Fontana A, Quaglia F, La Rotonda MI, Miralto A. Giant liposomes as delivery system for ecophysiological studies in copepods. *J Exp Biol* 2006; 209: 801-809.
4. Carotenuto Y, Ianora A, Di Pinto M, Sarno D, Miralto A. Annual cycle of early developmental stage survival and recruitment in the copepods *Temora stylifera* and *Centropages typicus* *Mar Ecol Prog Ser* 2006; 314: 227-238.
5. Ianora A, Boersma M, Casotti R, Fontana A, Harder J, Hoffman F, Pavia H, Poulet SA, Toth G. The H.T. Odum Synthesis Essay: New trends in marine chemical ecology. *Estuar Coasts* 2006; 29: 531-551.
6. Ianora A, Miralto A, Halband-Lenk C. Reproduction, hatching success, and early naupliar survival in *Centropages typicus*. *Prog Oceanogr* 2007; 72: 195-213.
7. Fontana A, d'Ippolito G, Cutignano A, Miralto A, Ianora A, Romano G, Cimino G. Chemistry of oxylipin pathways in marine diatoms. *Pure and Applied Chemistry* 2007; 79: 481-490.
8. Ribalet F, Wichard T, Pohnert G, Ianora A, Miralto A, Casotti R. Age and nutrient limitation enhance polyunsaturated aldehyde production in marine diatoms. *Phytochemistry* 2007; 68: 2059-2067.
9. Fontana A, d'Ippolito G, Cutignano A, Romano G, Lamari N, Massa Gallucci A, Cimino G, Miralto A, Ianora A. LOX-induced peroxidation mechanism responsible for the detrimental effect of marine diatoms on zooplankton grazers *ChemBioChem* 2007; 8: 1810-1818.
10. Ribalet F, Berges JA, Ianora A, Casotti R. Growth inhibition of cultured marine phytoplankton by algal-derived polyunsaturated aldehydes *Aquat Toxicol* 2007; 85: 219-227.
12. Buttino I, De Rosa G, Carotenuto Y, Mazzela M, Ianora A, Esposito F, Vitiello V, Quaglia F, La Rotonda MI, Miralto A. Aldehyde-encapsulating liposomes impair marine grazer survivorship *J Exp Biol* 2008; 211: 1426-1433.
13. Ianora A, Casotti R, Bastianini M, Brunet C, d'Ippolito G, Fontana A, Cutignano A, Turner JT, Miralto A. Low reproductive success for copepods during a

- bloom of the non-aldehyde-producing diatom *Cerataulina pelagica* in the North Adriatic Sea. *Mar Ecol* 2008; 29: 399-410.
14. Brugnano C, Guglielmo L, Ianora A, Zagami G. Temperature effects on fecundity, development and survival of the benthopelagic calanoid copepod, *Pseudocyclops xiphorus* Wells, 1967. *Mar Biol* 2009; 156: 331-340.
 15. Buttino I, Ianora A, Buono S, Vitello V, Miralto A. Are monoalgal diets inferior to plurialgal diets to maximize cultivation of the Calanoid Copepod *Temora stylifera*? *Mar Biol* 2009; 156:1171-1182.
 16. Ribalet F, Vidoudez C, Cassin D, Pohnert G, Ianora A, Miralto A, Casotti R. High plasticity in the production of diatom-derived polyunsaturated aldehydes under nutrient limitation: Physiological and ecological implications *Protist* 2009; 160: 444-451.
 17. Ianora A, Miralto A. Toxicogenic effects of diatoms on grazers, phytoplankton and other microbes: A review. *Ecotoxicol* 2010; 19:493-511.
 18. Romano G, Miralto A, Ianora A. Teratogenic effects of diatom metabolites on sea urchin *Paracentrotus lividus* embryos. *Mar. Drugs* 2010; 8: 950-967.
 19. Barreiro A, Carotenuto Y, Lamari N, Esposito F, d'Ippolito G, Fontana A, Romano G, Ianora A, Miralto A, Guisande C. Diatom induction of reproductive failure in copepods: the effect of PUAs versus other toxic non volatile oxylipins *J Exp Mar Biol Ecol* 2011; 401: 13-19.
 20. Buttino I, Hwang S-H, Sun C-K, Hsieh C-T, Liu TM, Pellegrini D, Ianora A, Sartori D, Romano G, Cheng S-H, Miralto A. Apoptosis to predict copepod mortality: state of the art and future perspectives *Hydrobiol* 2011; 666:257-264.
 21. Carotenuto Y, Ianora A, Miralto A. Maternal and neonate diatom diets impair development and sex differentiation in the copepod *Temora stylifera* *J Exp Mar Biol Ecol* 2011; 396: 99-107.
 22. Gerech A, Romano G, Ianora A, d'Ippolito G, Fontana A. Plasticity of oxylipin metabolism among clones of the marine diatom *Skeletonema marinoi*. *J Phycol* 2011; 47: 1050-1056.
 23. Ianora A, Romano G, Carotenuto Y, Esposito F, Roncalli V, Buttino I, Miralto A. Impact of the diatom oxylipin 15S-HEPE on the reproductive success of the copepod *Temora stylifera* *Hydrobiol* 2011; 666:265-275.
 24. Lauritano C, Borra M, Carotenuto Y, Biffali E, Miralto A, Procaccini G, Ianora A. First molecular evidence of diatom effects in the copepod *Calanus helgolandicus*. *Journal of Experimental Marine Biology and Ecology* 2011; 404: 79-86.
 25. Van Donk E, Ianora A, Vos M. M Induced defenses in marine and freshwater phytoplankton: a review. *Hydrobiol* 2011; 668:3-19.
 26. Romano G, Costantini M, Buttino I, Ianora A, Palumbo A. Diatom derived polyunsaturated aldehydes trigger a Nitric Oxide protective response against teratogenesis in the sea urchin *Paracentrotus lividus* *PloS ONE* 2011; 6: e25980.
 27. Ianora A, Bentley MG, Caldwell G, Casotti R, Cembella A, Engstrom-Ost J, Halsband-Lenk C, Kaeppel E, Legrande C, Llyewnn C, Pohnert G, Romano G, Miltenyte A, Pilkaityte R, Razinkovas A, Tilman U, Vaiciute R. The relevance of marine chemical ecology to plankton and ecosystem function: an emerging field. *Mar Drugs* 2011; 9: 1625-1648.

28. Lauritano C, Borra M, Carotenuto Y, Biffali E, Miralto A, Procaccini G, Ianora A. Molecular evidence of the toxic effects of diatom diets on gene expression patterns in copepods. *PloS ONE* 2011; 6: e26850.
29. Buttino I, Ianora A, Buono S, Vitiello V, Malzone MG, Rico C, Lancellotti AL, Sansone G, Gennari L, Miralto A. Cultivation of the Mediterranean calanoid copepods *Temora stylifera* and *Centropages typicus* in a pilot re-circulating system. *Aquaculture Res* 2012; 43: 247-259.
30. Buttino I, Pellegrini D, Romano G, Hwang J-S, Liu T-M, Sartori D, Sun C-K, Macchia S, Ianora A. Study of apoptosis induction using fluorescent and higher harmonic generation microscopy techniques in *Acartia tonsa* nauplii exposed to chronic concentrations of Nickel. *Chem Ecol* 2012; 43: 247–259.
31. Lauritano C, Procaccini G, Ianora, A. Gene expression patterns and stress response in marine copepods. *Mar Environ Res* 2012; 76: 22-31.
32. Marrone V, Piscopo M, Romano G, Ianora A, Palumbo A, Costantini M. Stress surveillance system against toxic diatom aldehydes in sea urchins *PloS ONE* 2012; 7: e31750.
33. Turner JT, Roncalli V, Ciminiello P, Dell'Aversano C, Fattorusso E, Tartaglione L, Carotenuto Y, Romano G, Esposito F, Miralto A, Ianora A. Biogeographic effects of the Gulf of Mexico red tide dinoflagellate *Karenia brevis* on Mediterranean copepods. *Harmful Algae* 2012; 16: 63-73.
34. Carotenuto Y, Esposito F, Pisano F, Lauritano C, Miralto A, Perna M, Ianora A. Multi-generation cultivation of the copepod *Calanus helgolandicus* in a re-circulating system. *J Exp Mar Biol Ecol* 2012; 418-419: 46-58.
35. Lauritano C, Carotenuto Y, Procaccini G, Miralto A, Ianora A. Gene expression patterns in Atlantic and Mediterranean *Calanus helgolandicus* populations exposed to the same diatom diet. *PloS ONE* 2012; 7: e47262.
36. Zhang J, Wu C, Pellegrini D, Romano G, Esposito F, Ianora A, Buttino I. Effects of different monoalgal diets on egg production, hatching success and apoptosis induction in a Mediterranean population of the calanoid copepod *Acartia tonsa* (Dana). *Aquaculture* 2013; 400-401: 65–72.
37. Gerech A, Carotenuto Y, Ianora A, Romano G, Fontana A, d'Ippolito G, Jakobsen HH, Nejstgaard JC. Oxylipin production during a mesocosm bloom of *Skeletonema marinoi*. *J Exp Mar Biol Ecol* 2013; 446: 159–165.
38. Lauritano C, Carotenuto Y, Procaccini G, Miralto A, Turner JT, Ianora. A Stress gene expression levels in the copepod *Calanus helgolandicus* feeding on a non-toxic strain of the dinoflagellate *Karenia brevis*. *Harmful Algae* 2013; 28:23-30.
39. Michalec FG, Kâ S, Holzner M, Souissia S, Ianora A, Hwang J-S Changes in the dynamics of *Pseudodiaptomus annandalei* (Copepoda, Calanoida) adults exposed to the diatom toxin 2-trans, 4-trans decadienal. *Harmful Algae* 2013; 30: 56–64.
40. Carotenuto Y, Dattolo E, Lauritano C, Pisano F, Sanges R, Miralto A, Procaccini G, Ianora A. Insights into the transcriptome of the copepod *Calanus helgolandicus* feeding on the oxylipin-producing diatom *Skeletonema marinoi*. *Harmful Algae* 2014; 31: 153–162.
41. Kâ S, Carotenuto Y, Romano G, Hwang J-S, Buttino I, Ianora A. Impact of the diatom-derived polyunsaturated aldehyde 2-trans,4-trans decadienal on the feeding, survivorship and reproductive success of the Calanoid copepod *Temora stylifera*. *Mar Environ Res* 2014; 93: 31-37.

42. Ribalet F, Bastianini M, Vidoudez C, Acri F, Berges J, Ianora A, Miralto A, Pohnert G, Romano G, Wichard T, Casotti R. Phytoplankton cell lysis associated with polyunsaturated aldehyde release in the northern Adriatic Sea. *PLoS ONE* 2014; 9: e85947.
43. Varrella S, Romano G, Ianora A, Bentley M, Ruocco N, Costantini M. Molecular response to toxic diatom-derived aldehydes in the sea urchin *Paracentrotus lividus*. *Mar Drugs* 2014; 12: 2089-2113.
44. Sansone C, Braca A, Ercolesi E, Romano G, Palumbo A, Casotti R, Francone M, Ianora A. Diatom-derived polyunsaturated aldehydes activate cell death in human cancer cell lines but not normal cells. *PLoS ONE* 2014; 9: e101220.
45. Ianora A, Bastianini M, Carotenuto Y, Casotti R, Roncalli R, Miralto A, Romano G, Gerech A, Fontana A, Turner JT. Some diatom blooms are more toxic for copepod recruitment due to production of non-volatile oxylipins. *Harmful Alga* 2015; 44: 1-7.
46. Castellano I, Ercolesi E, Romano G, Ianora A, Palumbo A. The diatom-derived aldehyde decadienal affects life cycle transition in the ascidian *Ciona intestinalis* through Nitric oxide/ERK signaling. *Open Biol.* 2015; 5: 140182.
47. Lettieri A, Esposito R, Ianora A, Spagnuolo A. *Ciona intestinalis* as a marine model system to study some key developmental genes targeted by the diatom-derived aldehyde decadienal. *Mar Drugs* 2015; 13: 1451-1465.
48. Dhankera R, Molinero JC, Kumarc R, Tsenga L-C, Ianora A, Hwang J-S. Sensitivity of the estuarine calanoid copepod *Pseudodiaptomus annandalei* to polyunsaturated aldehydes: Reproduction, survival and naupliar development. *Harmful Algae* 2015; 43: 74-81.
49. Zhang J, Ianora A, Wu C, Pellegrini D, Buttino, I. How crowding and food quantity influence fecundity in the copepod *Acartia tonsa* (Dana) *Aquaculture Research* 2015 doi:10.1111/are.12456
50. Asai S, Lauritano C, Ianora A, Carotenuto Y. High-quality RNA Extraction from Copepods for Next Generation Sequencing: A Comparative Approach. *Marine Genomics* 2015; <http://dx.doi.org/10.1016/j.margen.2014.12.004>.
51. Lauritano, C., Carotenuto, Y., Vitiello, V., Buttino, I., Romano, G., Hwang, J.-S., & Ianora, A. (2015). Effects of the oxylipin-producing diatom *Skeletonema marinoi* on reproduction and gene expression of the calanoid copepod *Calanus sinicus*. *Marine Genomics* 2015; <http://dx.doi.org/10.1016/j.margen.2015.01.007>.
52. Costantini, S., Romano, G., Rusolo, F., Capone, F., Guerriero, E., Colonna, G., Ianora, A., Ciliberto, G. & Costantini, M. Anti-inflammatory effects of methanol extract from the marine sponge *Geodia cydonium* on the human breast cancer MCF-7 cell line. *Mediators of Inflammation* 2015; Article ID 204975, in press
53. Lauritano, C., Orefice, I., Procaccini, G., Romano, G. & Ianora, A. (2015) Selected genes as stress indicators in the ubiquitous diatom *Skeletonema marinoi*. *BMC Genomics* (in press)
54. Orefice, I., Lauritano, C., Procaccini, G., Ianora, A. & Romano, G. (2015) Possible cell-death markers in the diatom *Skeletonema marinoi* in response to senescence and silica starvation. *Marine Genomics* (in press)

BOOKS

- 1 . Querellou, J., Borresen, T., Boyen, C., Dobson, A., Hofle, M., Ianora, A., Jaspars, M., Kijjoo, A., Olafsen, J., Rigos, G. & Wijffels, R. (2010). Marine Biotechnology: A New Vision and Strategy for Europe. Marine Board-ESF Position Paper 15, Pp. 1-96.

CHAPTERS IN BOOKS

1. Ianora A. (2005). Birth-control effects of diatoms for copepod reproduction: implications for aquaculture studies. In: Lee, C.-S., O'Bryen, P.J. & Marcus, N.H. (Eds). Copepods in Aquaculture. Blackwell Publishing. Oxford, UK. ISBN-13: 978-0-8138-0066-0. Pp. 31-48.
2. Buttino, I. & Ianora, A. (2010). Allevamento dei Copepodi planctonici in piccoli e grandi volumi. In: Metodologie di studio del plancton marino. Edito da G. Socal, G., Buttino, I., Cabrini, M., Mangoni, O., Penna, A. & Totti, C. ISPRA. ISBN: 978-88-448-0427-5.
3. Ianora, A., Miralto, A. & Romano, G. (2012). The antipredatory defensive role of planktonic marine natural products. In: Fattorusso, E., Gerwick, W.H. & Tagliatela-Scafati, O. (Eds). Handbook of Marine Natural Products. Vol. 2. Springer. ISBN: 978-90-481-3833-3. pp. 712-748.