

Maria Valeria D'Auria
Professor of Organic Chemistry
Department of Pharmacy, University "Federico II" Napoli, Italy

Maria Valeria D'Auria was born in Napoli (Italy) in 1958.

Education: Doctor of Chemistry (1981) University of Napoli (Magna Cum Laude);

Positions: Professor of Organic Chemistry, University of Napoli (since 2003); Associate Professor, University of Napoli, Italy (1998-2003); Assistant Professor, University of Napoli, Italy (1983-1998).

Scientific responsibility President (elected; 2020-2022) of the Organic Chemistry Division of Italian Chemical Society

Service: Member (elected) of the Steering Committee of the Organic Division of the Italian Chemical Society (2016-2019); Coordinator (elected) of the PhD Course in Pharmaceutical Sciences (2007-) Member (elected) of the Council of the Department of Pharmacy (2019-), Member (elected) of the Council of the Medical School of the University of Napoli (2017-2020)

Grants: PI of Research Unit PRIN 2004

PI of the research Project 2006-2008 "Biodiversité et substances marines actives du Pacifique Sud», bilateral reaserch with Université Paul Sabatier, Toulouse, France
WP Leader del WP2 " Isolation and chemical characterization" of MAREX—Exploring Marine Resources for Bioactive Compounds: From Discovery to Sustainable Production and Industrial Applications (Call FP7-KBBE-2009-3, Project nr. 245137) 2011-2014

Membership to Editorial boards: European J. of Organic Chemistry till 2013;

Current bibliometric record : (WOS 08/2020) Hindex: 34 ; ISI database entries reported: 122; Number of times cited: 3833;

Research Topics The research interests have been mainly devoted to: a) the discovery and the chemical and pharmacological investigation of bioactive natural products as lead compounds in the area of antiviral, antitumoral, antiinflammatory and immunomodulant activities; b) the stereochemical analysis of flexible organic molecules by NMR and computational approaches; c) development of synthetic and semi synthetic derivatives targeting specific relevant proteins .

Publications (2010-2020)

Sepe, Valentina; D'Auria, Maria Valeria; Bifulco, Giuseppe; Ummarino, Raffaella; Zampella, Angela. "Concise synthesis of AHMHA unit in perthamide C. Structural and stereochemical revision of perthamide C".Tetrahedron 2010, 66, 7520-7526.

Festa, Carmen; De Marino, Simona; D'Auria, Maria Valeria; Bifulco, Giuseppe; Renga, Barbara; Fiorucci, Stefano; Petek, Sylvain; Zampella, Angela. "Solomonsterols A and B from Theonella swinhoei. The First Example of C-24 and C-23 Sulfated Sterols from a Marine Source Endowed with a PXR Agonistic Activity."Journal of Medicinal Chemistry 2011, 54, 401-405.

Festa, Carmen; De Marino, Simona; Sepe, Valentina; D'Auria, Maria Valeria; Bifulco, Giuseppe; Debitus, Cecile; Bucci, Mariarosaria; Vellecco, Valentina; Zampella, Angela. Solomonamides A and B, New Anti-inflammatory Peptides from *Theonella swinhoei*. *Organic Letters* 2011, 13, 1532-1535.

De Marino, Simona; Ummarino, Raffaella; D'Auria, Maria Valeria; Chini, Maria Giovanna; Bifulco, Giuseppe; Renga, Barbara; D'Amore, Claudio; Fiorucci, Stefano; Debitus, Cecile; Zampella, Angela. Theonellasterols and Conicasterols from *Theonella swinhoei*. *Novel Marine Natural Ligands for Human Nuclear Receptors*. *Journal of Medicinal Chemistry* 2011, 54, 3065-3075.

De Marino, S.; Sepe, V.; D'Auria, M. V.; Bifulco, G.; Renga, B.; Petek, S.; Fiorucci, S.; Zampella, A. Towards new ligands of nuclear receptors. Discovery of Malaitasterol A, an unique bis-secosterol from marine sponge *Theonella swinhoei*. *Org. Biomol. Chem.* 2011, 9 (13), 4856 - 4862.

Sepe, Valentina; Ummarino, Raffaella; D'Auria, Maria Valeria; Mencarelli, Andrea; D'Amore, Claudio; Renga, Barbara; Zampella, Angela; Fiorucci, Stefano. Total Synthesis and Pharmacological Characterization of Solomonsterol A, a Potent Marine Pregnane-X-Receptor Agonist Endowed with Anti-Inflammatory Activity. *Journal of Medicinal Chemistry* 2011, 54, 4590-4599.

De Marino Simona; Festa Carmen; D'Auria Maria Valeria; Cresteil Thierry; Debitus Cécile; Zampella Angela Swinholide J, a Potent Cytotoxin from the Marine Sponge *Theonella swinhoei*. *Marine drugs* 2011, 9, 1133-41.

Festa, Carmen; De Marino, Simona; Sepe, Valentina; D'Auria, Maria Valeria; Bifulco, Giuseppe; Andres, Rosa; Terencio, Maria Carmen; Paya, Miguel; Debitus, Cecile; Zampella, Angela. Perthamides C-F, potent human antipsoriatic cyclopeptides. *Tetrahedron* 2011, 67(40), 7780-7786.

Sepe, V.; Ummarino, R.; M. V. D'Auria, M. G. Chini, G. Bifulco, Barbara Renga, C. D'Amore, Cécile D., Stefano F.; Zampella, A. Conicasterol E, a small heterodimer partner sparing farnesoid-X-receptor modulator endowed with a pregnane-X-receptor agonistic activity, from the marine sponge *Theonella swinhoei*. *Journal of Medicinal Chemistry* 2012, 55, 84-93, DOI: 10.1021/jm201004p5.248

Renga, B.; Mencarelli, A.; D'Amore, C.; Cipriani, S.; D'Auria, M. V.; Sepe, V.; Chini, M. G.; Monti, M. C.; Bifulco, G.; Zampella, A.; Fiorucci S. Discovery of theonellasterol a marine sponge sterol as a highly selective FXR antagonist that protects against liver injury in cholestasis, *PLoS ONE* 2012 7(1): e30443. doi:10.1371/journal.pone.0030443

M. V. D'Auria; V. Sepe; A. Zampella "Natural Ligands for Nuclear Receptors: Biology and Potential Therapeutic Applications *Current Topics in Medicinal Chemistry*, 2012, 12, 637-669.

Chini, Maria Giovanna; Jones, Catharine R.; Zampella, Angela; D'Auria, Maria Valeria; Renga, Barbara; Fiorucci, Stefano; Butts, Craig P.; Bifulco, Giuseppe "Quantitative NMR-Derived Interproton Distances Combined with Quantum Mechanical Calculations of ¹³C Chemical Shifts in the Stereochemical Determination of Conicasterol F, a Nuclear Receptor Ligand from *Theonella swinhoei*" *Journal of Organic Chemistry*, 2012, 77(3), 1489-1496. DOI: 10.1021/jo2023763

Simona De Marino, Raffaella Ummarino, Maria Valeria D'Auria, Maria Giovanna Chini, Giuseppe Bifulco, Claudio D'Amore, Barbara Renga, Andrea Mencarelli, Sylvain Petek, Stefano Fiorucci, Angela Zampella 4-Methylenesterols from *Theonella swinhoei* sponge are natural pregnane-X-receptor agonists and farnesoid-X-receptor antagonists that modulate innate immunity. *Steroids* 2012, 77, 484-495. doi:10.1016/j.steroids.2012.01.006

Carmen Festa, Simona De Marino, Maria Valeria D'Auria, Maria Chiara Monti, Mariarosaria Bucci, Valentina Vellecco, Cécile Debitus, Angela Zampella Anti-inflammatory cyclopeptides from the marine sponge *Theonella swinhoei* *Tetrahedron* 2012, 68, 2851-2857. doi:10.1016/j.tet.2012.01.097

Sepe, V.; Ummarino, R.; D'Auria, M.V., Lauro, G., Bifulco G., D'Amore C., Renga B., Fiorucci S., Zampella A. Modification in the side chain of solomonsterol A: discovery of cholestan disulfate as a potent pregnane-X-receptor agonist. *Org Biomol Chem.* 2012 10(31), 6350-6362, DOI: 10.1039/C2OB25800E

Sepe, V.; Ummarino, R.; D'Auria, M.V.; Renga, B.; Fiorucci, S.; Zampella, A.; The First Total Synthesis of Solomonsterol B, a Marine Pregnane X Receptor Agonist *Eur. J.O.C.*, 2012, 5187-5194, DOI:10.1002/ejoc.201200619 3.329

Sepe, V.; Ummarino, R.; D'Auria, M.V.; Tagliatela Scafati, O.; D'Amore, C.; Renga, B.; Nakao, Y.; Fusetani, N.; Fiorucci, S.; Zampella, A. Preliminary Structure-Activity Relationship on Theonellasterol, a New Chemotype of FXR Antagonist, from the Marine Sponge *Theonella swinhoei*. *Mar. Drugs* 2012, 10(11), 2448-2466; doi:10.3390/md10112448

Festa Carmen; Lauro Gianluigi; De Marino Simona; D'Auria Maria Valeria; Monti Maria Chiara; Casapullo Agostino; D'Amore Claudio; Renga Barbara; Mencarelli Andrea; Petek Sylvain; Bifulco, Giuseppe; Fiorucci, Stefano and Angela Zampella Plakilactones from the marine sponge *Plakinastrella mamillaris*. Discovery of a new class of marine ligands of peroxisome proliferator-activated receptor γ *Journal of Medicinal Chemistry* 2012, 55(19), 8303-8317

Fiorucci, S., Distrutti, E., Bifulco, G., D'Auria, M.V., Zampella, A. Marine sponge steroids as nuclear receptor ligands *Trends in Pharmacological Sciences*, 2012, 33, pp. 591-601

Festa, C.; De Marino, S.; D'Auria, M. V.; Deharo, E.; Gonzalez, G.; Deyssard, C.; Petek, S.; Bifulco, G.; Zampella A. Gracilioethers E-J, new oxygenated polyketides from the marine sponge *Plakinastrella mamillaris*, *Tetrahedron*, 2012, 68, 10157-10163.

Festa, C.; De Marino, S.; D'Auria, M. V.; Tagliatela-Scafati, O.; Deharo, E.; Petek, S.; Zampella, A. New antimalarial polyketide endoperoxides from the marine sponge *Plakinastrella mamillaris* collected at Fiji Islands *Tetrahedron* 2013, 69, 3706-3713.

Di Leva, F.S., Festa, C., D'Amore, C., De Marino, S., Renga, B., D'Auria M.V., Novellino, E., Limongelli, V., Zampella, A., Fiorucci, S. Binding mechanism of the farnesoid X receptor marine antagonist suvanine reveals a strategy to forestall drug modulation on nuclear receptors. Design, synthesis, and biological evaluation of novel ligands *Journal of Medicinal Chemistry* 2013, 56(11), 4701-4717.

Festa, C.; D'Amore, C.; Renga, B.; Lauro, G.; Marino, S.D.; D'Auria, M.V.; Bifulco, G.; Zampella, A.; Fiorucci, S. Oxygenated Polyketides from *Plakinastrella mamillaris* as a New Chemotype of PXR Agonists. *Mar. Drugs* 2013, 11, 2314-2327.

Chiara Cassiano, Roberta Esposito, Alessandra Tosco, Angela Zampella, Maria Valeria D'Auria, Raffaele Riccio, Agostino Casapullo and Maria Chiara Monti Heteronemin, a marine sponge terpenoid, targets TDP-43, a key factor in several neurodegenerative disorders, *Chem. Commun.*, 2014, 50, 406-408,

Simone Di Micco, Barbara Renga, Adriana Carino, Maria Valeria D'Auria, Angela Zampella, Raffaele Riccio, Stefano Fiorucci, Giuseppe Bifulco "Structural insights into Estrogen Related Receptor- β modulation: 4-methylenesterols from *Theonella swinhoei* sponge as the first example of marine natural antagonists " *Steroids* DOI:10.1016/j.steroids.2013.11.017

Simone Di Micco, Angela Zampella, Maria Valeria D'Auria, Carmen Festa, Simona De Marino, Raffaele Riccio, Craig P. Butts, Giuseppe Bifulco Plakilactones G and H from a marine sponge. Stereochemical determination of highly flexible systems by quantitative NMR-derived interproton distances combined with quantum mechanical calculations of ^{13}C chemical shifts *Beilstein J. Org. Chem.* 2013, 9, 2940-2949.

Valentina Sepe, Claudio D'Amore, Raffella Ummarino, Barbara Renga, Maria Valeria D'Auria, Ettore Novellino, Annamaria Sinisi, Orazio Tagliatela-Scafati, Yoichi Nakao, Vittorio Limongelli, Angela Zampella and Stefano Fiorucci Insights on Pregnane-X-Receptor Modulation. Natural and Semisynthetic Steroids from *Theonella* Marine Sponges *Eur. J. Med. Chem.* 73 (2014) 126e134

Andrea Mencarelli, Claudio D'Amore, Barbara Renga, Sabrina Cipriani, Adriana Carino, Valentina Sepe, Elisa Perissutti, Maria Valeria D'Auria, Angela Zampella, Eleonora Distrutti, Stefano Fiorucci Solomonsterol A, a marine pregnane-x-receptor agonist, attenuates inflammation and immune dysfunction in mouse model of arthritis. *Mar. Drugs* 2014, 12, 36-53; D'Amore C., Di Leva F.S., Sepe V., Renga B., Del Gaudio C., D'Auria M.V., Zampella A., Fiorucci S., Limongelli V. Design, synthesis and biological evaluation of potent dual agonists of nuclear and membrane bile acid receptors. *J Med Chem.* 2014,

Sepe, V.; Di Leva, F.S.; D'Amore, C.; Festa, C.; De Marino, S.; Renga, B.; D'Auria, M.V.; Novellino, E.; Limongelli, V.; D'Souza, L.; Majik, M.; Zampella, A.; Fiorucci, S. Marine and

Semi-Synthetic Hydroxysteroids as New Scaffolds for Pregnane X Receptor Modulation, *Mar. Drugs* 2014, 12, 3091-3115.

Lillsunde, K.-E.; Festa, C.; Adel, H.; De Marino, S.; Lombardi, V.; Tilvi, S.; Nawrot, D.A.; Zampella, A.; D'Souza, L.; D'Auria, M.V.; Päivi Tammela Bioactive Cembrane Derivatives from the Indian Ocean Soft Coral, *Sinularia kavarattiensis*, *Mar. Drugs* 2014, 12, 4045-4068.

Paula Kiuru, Maria Valeria D'Auria, Christian D. Muller, Päivi Tammela, Heikki Vuorela, Jari Yli-Kauhaluoma Exploring Marine Resources for Bioactive Compounds, *Planta Medica* 09/2014; 80(14).

Festa C, Cassiano C, D'Auria MV, Debitus C, Monti MC, De Marino S. Scalarane sesterterpenes from Thorectidae sponges as inhibitors of TDP-43 nuclear factor. *Org Biomol Chem.* 2015 12: 8646-8655

Monia Deghrigue, Carmen Festa, Lotfi Ghribi, Maria Valeria D'Auria, Simona de Marino, Hichem Ben Jannet, Rafik Ben Said and Abderrahman Bouraoui Pharmacological evaluation of the semi-purified fractions from the soft coral *Eunicella singularis* and isolation of pure compounds *DARU Journal of Pharmaceutical Sciences* 2014, 22, 64

Renga, B., Festa, C., Marino, S.D., Micco, S.D., D'Auria, M.V., Bifulco, G., Fiorucci, S., Zampella, A., Molecular decodification of gymnemic acids from *Gymnema sylvestre*. Discovery of a new class of liver X receptor antagonists, *Steroids* 2015, 96, 121–131

Deghrigue, M.; Carmen Festa, Lotfi Ghribi, Maria Valeria D'Auria, Simona De Marino, Hichem Ben Jannet, Abderrahman Bouraoui Anti-inflammatory and analgesic activities with gastroprotective effect of semi-purified fractions and isolation of pure compounds from Mediterranean gorgonian *Eunicella singularis* *Asian Pac. J. Trop. Med.* 2015, 412-420.

Festa, C.; D'Auria, M.V.; Sepe, V.; Ilaš, J.; Leick, A.; N'Gom, S.; De Marino, S. "Terpenoid Profile and Bioactivity Study of *Oenothera maritima*" *Phytochem. Lett* 2015, 13, 324–329

Giorgio Gnavi, Fortunato Palma Esposito, Carmen Festa, Anna Poli, Pietro Tedesco, Renato Fani, Maria Chiara Monti, Donatella de Pascale, Maria Valeria D'Auria, Giovanna Cristina Varese (2016). The antimicrobial potential of algicolous marine fungi for counteracting multidrug-resistant bacteria: phylogenetic diversity and chemical profiling. *RESEARCH IN MICROBIOLOGY*, vol. 167, p. 492-500, ISSN: 0923-2508,

Corral P, Esposito FP, Tedesco P, Falco A, Tortorella E, Tartaglione L, Festa C, D'Auria MV, Gnavi G, Varese GC, de Pascale D Identification of a Sorbicillinoid-Producing *Aspergillus* Strain with Antimicrobial Activity Against *Staphylococcus aureus*: a New Polyextremophilic Marine Fungus from Barents Sea *Mar Biotechnol (NY)*. 2018 Apr 12. doi: 10.1007/s10126-018-9821-9

Goldansaz, S.M.; Festa, C.; Pagano, E.; De Marino, S.; Finamore, C.; Parisi, O.A.; Borrelli, F.; Sonboli, A.; D'Auria, M.V. Phytochemical and Biological Studies of *Nepeta asterotricha* Rech. f. (Lamiaceae): Isolation of Nepetamoside. *Molecules* 2019, 24, 1684.

Buonocore, C.; Tedesco, P.; Vitale, G.A.; Palma Esposito, F.; Giugliano, R.; Monti, M.C.; D'Auria, M.V.; de Pascale, D. Characterization of a New Mixture of Mono-Rhamnolipids Produced by *Pseudomonas gessardii* Isolated from Edmonson Point (Antarctica). *Mar. Drugs* 2020, 18, 269.

Giovanni Andrea Vitale, Martina Sciarretta, Fortunato Palma Esposito, Grant Garren January, Marianna Giaccio, Boyke Bunk, Cathrin Spröer, Felizitas Bajerski, Deborah Power, Carmen Festa, Maria Chiara Monti, Maria Valeria D'Auria*, Donatella de Pascale*. Genomics-Metabolomics Profiling Disclosed Marine *Vibrio spartinae* 3.6 as a Producer of a New Branched Side Chain Prodigiosin *Journal Natural Products* 2020, 83, 1495-1504

Vitale, G.A.; Sciarretta, M.; Cassiano, C.; Buonocore, C.; Festa, C.; Mazzella, V.; Núñez Pons, L.; D'Auria, M.V.; de Pascale, D. Molecular Network and Culture Media Variation Reveal a Complex Metabolic Profile in *Pantoea cf. eucrina* D2 Associated with an Acidified Marine Sponge. *Int. J. Mol. Sci.* 2020, 21, 6307.