CURRICULUM VITAE

Dr Alessandra Ammazzalorso

Alessandra Ammazzalorso

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Education

2004 - present: Assistant Professor of Medicinal Chemistry (SSD CHIM/08) at the Pharmacy Department, G. d'Annunzio University, Chieti-Pescara, Italy.

2009 - present: Chair of Chimica Farmaceutica e Tossicologica I in the course of Pharmacy, G. d'Annunzio University, Chieti-Pescara, Italy.

2004 - 2009: Chair of Analisi dei Farmaci I in the course of Chemistry and Pharmaceutical Technology, School of Pharmacy, G. d'Annunzio University, Chieti-Pescara, Italy

2001: Doctor of Philosophy in Pharmaceutical Sciences, at G. d'Annunzio University, Chieti-Pescara, under the supervision of Prof. Giancarlo Bettoni.

1998: Qualification for the profession of Pharmacist.

1998: (5 months) Visiting Scientist at University of Bari, faculty of Pharmacy, under the supervision of Prof. Angelo Carotti, where she got basic knowledge of molecular modeling techniques.

1997: Degree with Laude in Chemistry and Pharmaceutical Technology at the G. d'Annunzio University, Chieti-Pescara.

Relevant Experience

Since 2007-2008 she has been academic supervisor of experimental thesis in Pharmacy and Chemical and Pharmaceutical Technology.

She is referee for several journals of Medicinal Chemistry and Chemistry (Journal of Medicinal Chemistry, ACS Medicinal Chemistry Letters, Bioorganic Medicinal Chemistry, Molecules, International Journal of Molecular Sciences, Chemical Biology & Drug Design, Cancers, Cells, Journal of Pharmacy & Pharmacology, European Journal of Pharmacology, Neurochemistry International, Helvetica Chimica Acta, Chemistry Select, Letters in Drug Design & Discovery, Future Drug Discovery, The Natural Product Journal, Arabian Journal of Chemistry).

She serves as an editorial board member for The Open Medicinal Chemistry Journal (Bentham) and The Natural Products Journal (Bentham). She takes part to the Journal Topic Board of Biology (MDPI) and to the Reviewer Board of Cells (MDPI).

She has been serving as Guest Editor for the Special Issues "Antitumor and metabolic effects mediated by PPARs" in Biology (MDPI) and "Anticancer inhibitors" in Molecules (MDPI).

She participated to the evaluation of doctoral thesis (Dottorato di Ricerca in Genomica e Proteomica Funzionale e Applicata) for University of Bari, Italy (November 2019).

Since 2012 Dr Ammazzalorso participates as reviewer in the evaluation of research proposal for National Science Center, Poland. Since 2020, she evaluates research proposals for the Austrian Science Fund (FWF).

Organizing Activity

She was member of:

- the Organizing Committee of "XVIII Convegno Nazionale della Divisione di Chimica Farmaceutica della Società Chimica Italiana", Chieti, Italy, September 2007;

- the Organizing Committee of "I Giornata di Studio Giancarlo Bettoni, "Chimica, Innovazione e ....", Chieti, Italy, May 2013;

- the Scientific and Organizing Committee of “II Giornata di Studio Giancarlo Bettoni, “Terapia della neurodegenerazione: nuovi scenari di ricerca”, Chieti, Italy, December 2014;

- the Scientific and Organizing Committee of “III Giornata di Studio Giancarlo Bettoni, “Innovazione e ricerca in chimica farmaceutica”, Chieti, Italy, December 2019;

- the Organizing Committee of the “International Conference on Natural Products and Traditional Medicine” (Natural Products 2020), webinar, 13 July 2020.

Research interests

The main research projects of Dr. Alessandra Ammazzalorso concern:

- synthesis of novel PPAR ligands: this project is aimed to the discovery of novel agonists and antagonists of PPAR receptors, with a special attention to the antitumor potential of such ligands.

- synthesis of nitric oxide synthase inhibitors: this research item is focused on the identification of small molecules able to selectively inhibit inducible or neuronal NOS.

- synthesis of antitumor compounds targeting aromatase or carbonic anhydrases.

Research projects and grants

- Annual local grants from University “G. d’Annunzio”.

- Funding for basic activities related to research (*FFABR*) 2017.

- Participation in the project PRIN 1997, protocol 9703028183_013, “Progettazione, sintesi e valutazione biologica di nuovi farmaci”. Area 03 scienze chimiche. Responsabile scientifico di unità Prof. Giancarlo Bettoni.

- Participation in the project PRIN 1999, protocol 9903028474_006, “Progettazione, sintesi e valutazione biologica di nuovi farmaci cardiovascolari". Area 03 scienze chimiche. Responsabile scientifico di unità Prof. Giancarlo Bettoni.

- Participation in the project PRIN 2001, protocol 2001031474_004, “Progettazione, sintesi e valutazione biologica di nuovi farmaci cardiovascolari". Area 03 scienze chimiche. Responsabile scientifico di unità Prof. Giancarlo Bettoni.

- Participation in the project PRIN 2003, protocol 2003033405_005, “Progettazione, sintesi e valutazione biologica di nuovi farmaci cardiovascolari”. Area 03 scienze chimiche. Responsabile scientifico di unità Prof. Giancarlo Bettoni.

- Participation in the project PRIN 2017, “Extracellular vesicles in cancer development, progression and drug resistance: potential biomarkers and therapeutic targets”. Responsabile scientifico di unità Prof. Alessandro Cama.

- Participation in the project funded by the Spanish “Ministerio de Ciencia e Innovación”, “Carbohydrates and sulfur as basic tools in the design and synthesis of new therapeutically and/or synthetically relevant privilege molecular systems” (Reference: PID2019-104767RB-I00). Principal investigator Prof. Inmaculada Fernandez Fernandez, Sevilla University.

Scientific activity

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SCOPUS ID: 6507847421

Number of papers on international scientific journals: 67

h-INDEX: 17 (SCOPUS)

Total citations: 719 (SCOPUS)

List of publications

1. A. Ammazzalorso, R. Amoroso, G. Bettoni, B. De Filippis, Synthesis of diastereomerically enriched 2-bromoesters and their reaction with nucleophiles, *Chirality* **2001**, *13*, 102-108;
2. A. Ammazzalorso, R. Amoroso, M. Baraldi, G. Bettoni, D. Braghiroli, B. De Filippis, A. Duranti, M. Moretti, P. Tortorella, M. L. Tricca and F. Vezzalini, Synthesis and antiplatelet activity of gemfibrozil chiral analogues, *Bioorg. Med. Chem. Lett*. **2002**, *12*, 817-821;
3. A. Ammazzalorso, R. Amoroso, G. Bettoni, B. De Filippis, L. Giampietro, M. Pierini and M. L. Tricca, Asymmetric synthesis of (*S*)-ibuprofen by esterification with amides of (*S*)-lactic acid as chiral auxiliaries: experimental and theoretical results, *Tetrahedron Letters* **2002**, *43*, 4325-4328;
4. A. Ammazzalorso, R. Amoroso, G. Bettoni, B. De Filippis, L. Giampietro, C. Maccallini and M. L. Tricca, Dynamic kinetic resolution of α-bromoesters containing lactamides as chiral auxiliaries, *Arkivoc* **2004**, 375-381;

5. A. Ammazzalorso, R. Amoroso, G. Bettoni, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini, D. Paludi and M. L. Tricca, Synthesis and antibacterial evaluation of oxazolidin-2-ones structurally related to Linezolid, *Farmaco* **2004**, *59*, 685-690;
6. A. Ammazzalorso, R. Amoroso, G. Bettoni, M. Chiarini, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini and M. L. Tricca, Enantiomeric separation of gemfibrozil chiral analogues by capillary electrophoresis with heptakis(2,3,6-tri-*O*-methyl)-β-cyclodextrin as chiral selector, *Journal of Chromatography A* **2005**, *1088*, 110-120;
7. A. Ammazzalorso, R. Amoroso, M. Baraldi, G. Bettoni, D. Braghiroli, B. De Filippis, L. Giampietro, M. L. Tricca and F. Vezzalini, Synthesis and antiplatelet activity of thioaryloxyacids analogues of clofibric acid, *Eur. J. Med. Chem.* **2005**, *40*, 918-921;
8. A. Ammazzalorso, R. Amoroso, G. Bettoni, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini and M. L. Tricca, Asymmetric synthesis of arylpropionic and aryloxy acids by using lactamides as chiral auxiliaries, *Eur. J. Org. Chem.* **2006**, 4088-4091;
9. A. Ammazzalorso, R. Amoroso, G. Bettoni, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini, M. L. Tricca, Candida rugosa lipase-catalysed kinetic resolution of 2-substituted-aryloxyacetic esters with dimethylsulfoxide and isopropanol as additives, *Chirality* **2008**, *20*, 115-118;
10. A. Ammazzalorso, G. Bettoni, B. De Filippis, M. Fantacuzzi, L. Giampietro, A. Giancristofaro, C. Maccallini, N. Re, R. Amoroso, C. Coletti, Synthesis of 2-aryloxypropanoic acids analogues of clofibric acid and assignment of the absolute configuration by ^{1}H NMR spectroscopy and DFT calculations, *Tetrahedron: Asymmetry* **2008**, *19*, 989-997;
11. C. Maccallini, A. Patruno, N. Besker, J. I. Alì, A. Ammazzalorso, B. De Filippis, S. Franceschelli, L. Giampietro, M. Pesce, M. Reale, M. L. Tricca, N. Re, M. Felaco, R. Amoroso, Synthesis, biological evaluation, and docking studies of *N*-substituted acetamidines as selective inhibitors of inducible Nitric Oxide Synthase, *J. Med. Chem.* **2009**, *52*, 1481-1485;
12. L. Giampietro, A. Ammazzalorso, A. Giancristofaro, F. Lannutti, G. Bettoni, B. De Filippis, M. Fantacuzzi, C. Maccallini, M. Petruzzelli, A. Morgano, A. Moschetta, R. Amoroso, Synthesis and biological evaluation of 2-heteroarylthioalkanoic acid analogues of clofibric acid as Peroxisome Proliferator-Activated Receptor α agonists, *J. Med. Chem.* **2009**, *52*, 6224-6232;
13. C. Maccallini, A. Patruno, F. Lannutti, A. Ammazzalorso, B. De Filippis, M. Fantacuzzi, S. Franceschelli, L. Giampietro, S. Masella, M. Felaco, N. Re, R. Amoroso, *N*-Substituted acetamidines and 2-methylimidazole derivatives as selective inhibitors of neuronal nitric oxide synthase, *Bioorg. Med. Chem. Lett*. **2010**, *20*, 6495-6499;

14. B. De Filippis, L. Giampietro, A. Giancristofaro, A. Ammazzalorso, M. Fantacuzzi, C. Maccallini, M. Petruzzelli, R. Amoroso, Synthesis and biological evaluation of gemfibrozil chiral analogues as potential PPARα agonists, *Letters in Drug Design and Discovery.* **2011**, *8*, 154-158;
15. M. Fantacuzzi, C. Maccallini, F. Lannutti, A. Patruno, S. Masella, M. Pesce, L. Speranza, A. Ammazzalorso, B. De Filippis, L. Giampietro, N. Re, R. Amoroso, Selective Inhibition of iNOS by Benzyl- and Dibenzyl Derivatives of *N*-(3-Aminobenzyl)acetamidine, *ChemMedChem* **2011**, *6*, 1203-1206;
16. A. Ammazzalorso, A. Giancristofaro, A. D'Angelo, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini, R. Amoroso, Benzothiazole-based *N*-(phenylsulfonyl)amides as a novel family of PPARα antagonists, *Bioorg. Med. Chem. Lett*. **2011**, *21*, 4869-4872;
17. B. De Filippis, A. Giancristofaro, A. Ammazzalorso, A. D'Angelo, M. Fantacuzzi, L. Giampietro, C. Maccallini, M. Petruzzelli, R. Amoroso, Discovery of gemfibrozil analogues that activate PPARα and enhance the expression of gene CPT1A involved in fatty acids catabolism, *Eur. J. Med. Chem.* **2011**, *46*, 5218-5224;
18. M. Di Tullio, C. Maccallini, A. Ammazzalorso, L. Giampietro, R. Amoroso, B. De Filippis, M. Fantacuzzi, P. Wiczling, R. Kaliszan, QSAR, QSPR and QSRR in terms of 3-D-MoRSE descriptors for in silico screening of clofibric acid analogues, *Molecular Informatics* **2012**, *31*, 453-458;
19. C. Maccallini, A. Patruno, A. Ammazzalorso, B. De Filippis, M. Fantacuzzi, S. Franceschelli, L. Giampietro, S. Masella, M. L. Tricca, R. Amoroso, Selective inhibition of inducible nitric oxide synthase by derivatives of acetamidine, *Medicinal Chemistry* **2012**, *8*, 991-995;
20. A. Ammazzalorso, A. D'Angelo, A. Giancristofaro, B. De Filippis, M. Di Matteo, M. Fantacuzzi, L. Giampietro, P. Linciano, C. Maccallini, R. Amoroso, Fibrate-derived *N*-(methylsulfonyl)amides with antagonistic properties on PPARα, *Eur. J. Med. Chem* **2012**, *58*, 317-322;
21. L. Giampietro, A. D'Angelo, A. Giancristofaro, A. Ammazzalorso, B. De Filippis, M. Fantacuzzi, P. Linciano, C. Maccallini, R. Amoroso, Synthesis and structure-activity relationships of fibrate-based analogues inside PPARs, *Bioorg. Med. Chem. Lett*. **2012**, *22*, 7662-7666;
22. A. Ammazzalorso, B. De Filippis, L. Giampietro, R. Amoroso, Blocking Peroxisome Proliferator-Activated Receptor: an overview, *ChemMedChem* **2013**, *8*, 1609-1616;
23. L. Giampietro, A. D'Angelo, A. Giancristofaro, A. Ammazzalorso, B. De Filippis, M. Di Matteo, M. Fantacuzzi, P. Linciano, C. Maccallini, R. Amoroso, Effect of stilbene and

chalcone scaffolds incorporation in clofibric acid on PPARα agonistic activity, *Medicinal Chemistry* **2014**, *10*, 59-65;

24. C. Maccallini, M. Di Matteo, A. Ammazzalorso, A. D'Angelo, B. De Filippis, S. Di Silvestre, M. Fantacuzzi, L. Giampietro, A. Pandolfi, R. Amoroso, Reversed-phase high-performance liquid chromatography method with fluorescence detection to screen nitric oxide synthases inhibitors, *J. Sep. Sci.* **2014**, *00*, 1-6;
25. B. De Filippis, P. Linciano, A. Ammazzalorso, C. Di Giovanni, M. Fantacuzzi, L. Giampietro, A. Laghezza, C. Maccallini, P. Tortorella, A. Lavecchia, F. Loiodice, R. Amoroso, Structural development studies of PPARs ligands based on tyrosine scaffold, *Eur. J. Med. Chem* **2015**, *89*, 817-825;
26. C. Maccallini, M. Montagnani, R. Paciotti, A. Ammazzalorso, B. De Filippis, M. Di Matteo, S. Di Silvestre, M. Fantacuzzi, L. Giampietro, M. A. Potenza, N. Re, A. Pandolfi, R. Amoroso, Selective acetamidine-based nitric oxide synthase inhibitors: synthesis, docking, and biological studies, *ACS Med. Chem. Lett.* **2015**, *6*, 635-640;
27. B. De Filippis, M. Agamennone, A. Ammazzalorso, I. Bruno, A. D'Angelo, M. Di Matteo, M. Fantacuzzi, L. Giampietro, A. Giancristofaro, C. Maccallini, R. Amoroso, PPARα agonists based on stilbene and its bioisosteres: biological evaluation and docking studies, *MedChemComm* **2015**, *6*, 1513-1517;
28. J. C. dos Santos, A. Bernardes, L. Giampietro, A. Ammazzalorso, B. De Filippis, R. Amoroso, I. Polikarpov, Different binding and recognition modes of GL479, a dual agonist of Peroxisome Proliferator-Activated Receptor α/γ, *J. Struct. Biol.* **2015**, *191*, 332-340;
29. A. Ammazzalorso, M. L. Tricca, I. Bruno, B. De Filippis, M. Di Matteo, M. Fantacuzzi, L. Giampietro, C. Maccallini, A. Mollica, R. Amoroso, Titanium-promoted acylation of sulfonamides to *N*-Acylsulfonamide PPARα antagonists, *Synth. Comm.* **2015**, *45*, 2546-2554;
30. L. Giampietro, A. Ammazzalorso, I. Bruno, S. Carradori, B. De Filippis, M. Fantacuzzi, A. Giancristofaro, C. Maccallini, R. Amoroso, Synthesis of naphthyl-, quinolin- and anthracenyl-analogues of clofibric acid as PPARα agonists, *Chem Biol Drug Des.* **2016**, 87(3):467-71;
31. M. Fantacuzzi, C. Maccallini, M. Di Matteo, A. Ammazzalorso, I. Bruno, B. De Filippis, L. Giampietro, A. Mollica, R. Amoroso, Screening of NOS activity and selectivity of newly synthesized acetamidines using RP-HPLC, *J. Pharm. Biomed. Anal.* **2016**, 120, 419-424;
32. A. Ammazzalorso, A. Carrieri, F. Verginelli, I. Bruno, G. Carbonara, A. D'Angelo, B. De Filippis, M. Fantacuzzi, R. Florio, G. Fracchiolla, L. Giampietro, A. Giancristofaro, C. Maccallini, A. Cama, R. Amoroso, Synthesis, *in vitro* evaluation, and molecular modeling

investigation of benzenesulfonimide Peroxisome Proliferator-Activated Receptors α antagonists, *Eur. J. Med. Chem.* **2016**, *114*, 191-200;

33. M. Di Matteo, A. Ammazzalorso, F. Andreoli, I. Caffa, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini, A. Nencioni, M. Parenti, D. Soncini, A. Del Rio, R. Amoroso, Synthesis and biological characterization of 3-(imidazol-1-ylmethyl)piperidine sulfonamides as aromatase inhibitors, *Bioorg. Med. Chem. Lett*. **2016**, *26*, 3192-3194;
34. A. Ammazzalorso, B. De Filippis, C. Maccallini, M. Pierini, Synthetic strategies to serine-proline chimeras: an overview, *Current Bioactive Compounds* **2016**, *12*, 136-145;
35. A. Tolomelli, A. Ammazzalorso, I. Bruno, R. Amoroso, A review of strategies for the development of alkyl prolines in drug discovery, *Current Bioactive Compounds* **2016**, *12*, 146-160;
36. C. Maccallini, M. Di Matteo, D. Vullo, A. Ammazzalorso, S. Carradori, B. De Filippis, M. Fantacuzzi, L. Giampietro, A. Pandolfi, C. T. Supuran, R. Amoroso, Indazole, pyrazole, and oxazole derivatives targeting nitric oxide synthases and carbonic anydrases, *ChemMedChem* **2016**, *11*,1-6;
37. A. Ammazzalorso, B. De Filippis, C. Campestre, A. Laghezza, A. Marrone, R. Amoroso, P. Tortorella, M. Agamennone. Seeking for non-zinc-binding MMP-2 inhibitors: synthesis, biological evaluation and molecular modelling studies. *Int. J. Mol. Sci.* **2016**, *17*, 1768;
38. E. Benedetti, M. d'Angelo, A. Ammazzalorso, G. Gravina, C. Laezza, A. Antonosante, G. Panella, B. Cinque, L. Cristiano, A.C. Dhez, C. Astarita, R. Galzio, M.G. Cifone, R. Ippoliti, R. Amoroso, E. Di Cesare, A. Giordano, A. Cimini. PPARα antagonist AA452 triggers metabolic reprogramming and increases sensitivity to radiation therapy in human glioblastoma primary cells. *J. Cell. Physiol*. **2017**, *232* (6),1458-1466;
39. B. De Filippis, A. Ammazzalorso, M. Fantacuzzi, L. Giampietro, C. Maccallini, R. Amoroso. Anticancer activity of stilbene-based derivatives. *ChemMedChem* **2017**, *12*, 558-570;
40. A. Ammazzalorso, L. De Lellis, R. Florio, I. Bruno, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini, S. Perconti, F. Verginelli, A. Cama, R. Amoroso. Cytotoxic effect of a family of Peroxisome Proliferator-Activated Receptor antagonists in colorectal and pancreatic cancer cell lines. *Chem Biol. Drug Des.* **2017**, *90*, 1029-1035;
41. R. Florio, L. De Lellis, V. di Giacomo, M.C. Di Marcantonio, L. Cristiano, M. Basile, F. Verginelli, D. Verzilli, A. Ammazzalorso, S.C. Prasad, A. Cataldi, M. Sanna, A. Cimini, R. Mariani-Costantini, G. Mincione, A. Cama, Effects of PPARα inhibition in head and neck paraganglioma cells, PLOS ONE **2017**, Jun 8;12(6):e0178995 doi: 10.1371/journal.pone.0178995;

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43. M. Fantacuzzi, A. Ammazzalorso, B. De Filippis, L. Giampietro, C. Maccallini, R. Amoroso, Methods to evaluate the activity of Nitric Oxide Synthase, *Curr. Pharm. Anal.* **2017**, 13(5): 411-416;
44. L. Leporini, L. Giampietro, R. Amoroso, A. Ammazzalorso, M. Fantacuzzi, L. Menghini, C. Maccallini, C. Ferrante, L. Brunetti, G. Orlando, B. De Filippis, In vitro protective effects of resveratrol and stilbene alkanoic derivatives on induced oxidative stress on C2C12 and MCF7 cells, *J Biol Regul Homeost Agents* **2017**, 31 (3), 589-601;
45. P. Linciano, A. Ammazzalorso, B. De Filippis, M. Fantacuzzi, L. Giampietro, C. Maccallini, R. Amoroso, Geometric isomerism of an acetamidino derivative determined by NMR investigations, *ChemistrySelect* **2017**, *15*, 9700-9704;
46. L. De Lellis, A. Cimini, S. Veschi, E. Benedetti, R. Amoroso, A. Cama, A. Ammazzalorso, The anticancer potential of Peroxisome Proliferator-Activated Receptor antagonists, *ChemMedChem* **2018**, *13*, 209-219;
47. C. Maccallini, M. Di Matteo, M. Gallorini, M. Montagnani, V. Graziani, A. Ammazzalorso, P. Amoia, B. De Filippis, S. Di Silvestre, M. Fantacuzzi, L. Giampietro, M. A. Potenza, N. Re, A. Pandolfi, A. Cataldi, R. Amoroso, Discovery of *N*-{3-[(ethanimidoylamino)methyl]benzyl}-Lprolinamide dihydrochloride: a new potent and selective inhibitor of the inducible nitric oxide synthase as a promising agent for the therapy of malignant glioma, *Eur. J. Med. Chem.* **2018**, *152*, 53-64;
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54. A. Ammazzalorso, R. Amoroso. Inhibition of PPARγ by natural compounds as a promising strategy in obesity and diabetes. *Open Med. Chem. J.* **2019**, 13, 7-15.
55. A. Ammazzalorso, C. Maccallini, P. Amoia, R. Amoroso. Multitarget PPARγ agonists as innovative modulators of the metabolic syndrome. *Eur. J. Med. Chem.* **2019**, *173*, 261-273.
56. L. Giampietro, A. Ammazzalorso, R. Amoroso, B. De Filippis. Development of fibrates as important scaffold in medicinal chemistry. *ChemMedChem* **2019**, *14*, 1051-1066.
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