

PERSONAL INFORMATION

Giacomo Rossino



📍 University of Pavia
Department of Drug Sciences
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Sex Male | Date of birth 17/09/1992 | Nationality Italian

Research Fellow (RTDA)

WORK EXPERIENCE

01/02/2023 - ongoing

Research Fellow (RTDA)

University of Pavia, Department of Drug Sciences

▪ Project title: sustainable research of novel anticancer drugs.

Business or sector Academic research in Medicinal Chemistry, Drug Discovery, Green Chemistry

01/04/2020 – 31/01/2022

Post-doc Researcher

University of Pavia, Department of Drug Sciences

Design, synthesis and biological validation of new Sigma receptors modulators

Design and synthesis of heterodimeric S1R-TSPO ligands as pharmacological tools for ALS treatment.

Business or sector Academic research in Medicinal Chemistry, Drug Discovery

11/2015 – 03/2016

Quality Control Analyst

Mipharm S.P.A. (Milan, Italy)

Chemical testing of raw material and finished products.

Business or sector Quality control laboratory in a pharmaceutical company

EDUCATION AND TRAINING

2020 – 2021

II Level Master in Drug Design and Development

University of Pavia, Department of Drug Sciences

▪ Thesis title: Comparison of different techniques for the absolute configuration assignment of chiral δ -lactams derivatives.

2016 – 2020

Ph.D. School in Chemical and Pharmaceutical Sciences

University of Pavia, Department of Drug Sciences

▪ Thesis title: Sigma-1 Receptor (S1R) modulators as a therapeutic strategy for promoting neuroplasticity. Design and synthesis of novel mono- and bi-valent ligands for SRs.

2014 – 2016

Master's Degree in Chemistry – LM-54

University of Pavia, Department of Chemistry

▪ Thesis title: Diastereoselective synthesis of tetrahydrofuran systems via catalytically generated oxocarbenium species

2011 – 2014 **Bachelor's Degree in Chemistry – L-27**
University of Pavia, Department of Chemistry
• Thesis title: Marine macrolides: biosynthesis, bioactivity and total synthesis.

WORK ACTIVITIES

Patents PCT/EP2022/066667 Substituted vinyl piperazine-piperidine urea derivatives as anticancer agents

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English (fluent), Spanish (basic)

Job-related skills Knowledge of the typical facilities of a chemical laboratory, experience in organic synthesis: setup and work-up of reactions, microwave-assisted synthesis, crude purification and characterization of small molecules through spectroscopy techniques (mono- and bi-dimensional NMR, IR, UV-visible, fluorescence) and mass spectrometry. Preparation and characterization of chiral compounds: enantio- and diastereo-selective synthesis, fractional crystallization, HPLC on chiral stationary phase, optical rotatory power, circular dichroism, "Mosher-like" derivatization.

Digital skills Knowledge of software for chemical sketch (ChemDraw), for NMR spectra analysis (MestReNova and TopSpin), databases for scientific literature research (SciFinder, Reaxys, PubMed, Protein Data Bank, Scopus), molecular modelling (Schrödinger's Maestro Suite, SwissADME), Microsoft Office (Word, Excel, PowerPoint), Microsoft Teams, Zoom, Google meet.

ADDITIONAL INFORMATION**Statement of Research Interests**

My current research interests include the application of Green Chemistry principles to Medicinal Chemistry programs, by enhancing sustainability and efficiency throughout the drug discovery process, from the design (i.e. exploiting in silico models) to the production (i.e. exploiting green synthetic methods) of new biologically active molecules. The final aim is the reduction of waste and the improvement of safety and resource use in the preparation of drug-like small molecules. The main therapeutic areas covered during my research activity include cancer (with particular focus on orphan and particularly aggressive tumors) and neurodegeneration. The Medicinal Chemistry projects I have been working on include the development and characterization of multitarget-directed ligands, bitopic ligands and chiral molecules.

Publications total number of publications in peer-review journals: **17**
total Impact Factor (IF) (average IF/paper): **5.46**
total number of citations: **72**
H index (Scopus): **5**

1. Listro, R.; Malacrida, A.; Ambrosio, F. A.; Rossino, G.; Di Giacomo, M.; Cavalloro, V.; Garbagnoli, M.; Linciano, P.; Rossi, D.; Cavaletti, G.; Costa, G.; Alcaro, S.; Miloso, M.; Collina, S. From Nature to Synthetic Compounds: Novel 1(N),2,3 Trisubstituted-5-Oxopyrrolidines Targeting Multiple Myeloma Cells. *Int. J. Mol. Sci.* **2022**, *23* (21), 13061. <https://doi.org/10.3390/ijms232113061>
2. Rossino, G.; Robescu, M. S.; Licastro, E.; Tedesco, C.; Martello, I.; Maffei, L.; Vincenti, G.; Bavaro, T.; Collina, S. Biocatalysis: A Smart and Green Tool for the Preparation of Chiral Drugs. *Chirality* **2022**, *34* (11), 1403–1418. <https://doi.org/10.1002/chir.23498>.
3. Tesei, A.; Cortesi, M.; Bedeschi, M.; Marino, N.; Rossino, G.; Listro, R.; Rossi, D.; Linciano, P.; Collina, S. Repurposing the Antiplatelet Agent Ticlopidine to Counteract the Acute Phase of ER Stress Condition: An Opportunity for Fighting Coronavirus Infections and Cancer. *Molecules* **2022**, *27* (14), 4327. <https://doi.org/10.3390/molecules27144327>.
4. Rossino, G.; Rui, M.; Linciano, P.; Rossi, D.; Boiocchi, M.; Peviani, M.; Poggio, E.; Curti, D.; Schepmann, D.; Wünsch, B.; González-Avendaño, M.; Vergara-Jaque, A.; Caballero, J.; Collina, S. Bitopic Sigma 1 Receptor Modulators to Shed Light on Molecular Mechanisms Underpinning Ligand Binding and Receptor Oligomerization. *J. Med. Chem.* **2021**, *64* (20), 14997–15016. <https://doi.org/10.1021/acs.jmedchem.1c00886>.
5. Pellavio, G.; Rossino, G.; Gastaldi, G.; Rossi, D.; Linciano, P.; Collina, S.; Laforenza, U. Sigma-1 Receptor Agonists Acting on Aquaporin-Mediated H₂O₂ Permeability: New Tools for Counteracting Oxidative Stress. *Int. J. Mol. Sci.* **2021**, *22* (18), 9790. <https://doi.org/10.3390/ijms22189790>.
6. Listro, R.; Rossino, G.; Della Volpe, S.; Stabile, R.; Boiocchi, M.; Malavasi, L.; Rossi, D.; Collina, S. Enantiomeric Resolution and Absolute Configuration of a Chiral δ -Lactam, Useful Intermediate for the Synthesis of Bioactive Compounds. *Molecules* **2020**, *25* (24), 6023. <https://doi.org/10.3390/molecules25246023>.
7. Rossino, G.; Rui, M.; Pozzetti, L.; Schepmann, D.; Wünsch, B.; Zampieri, D.; Pellavio, G.; Laforenza, U.; Rinaldi, S.; Colombo, G.; Morelli, L.; Linciano, P.; Rossi, D.; Collina, S. Setup and Validation of a Reliable Docking Protocol for the Development of Neuroprotective Agents by Targeting the Sigma-1 Receptor (S1R). *Int. J. Mol. Sci.* **2020**, *21* (20), 7708. <https://doi.org/10.3390/ijms21207708>.
8. Listro, R.; Stotani, S.; Rossino, G.; Rui, M.; Malacrida, A.; Cavaletti, G.; Cortesi, M.; Arienti, C.; Tesei, A.; Rossi, D.; Giacomo, M. D.; Miloso, M.; Collina, S. Exploring the RC-106 Chemical Space: Design and Synthesis of Novel (E)-1-(3-Arylbut-2-En-1-Yl)-4-(Substituted) Piperazine Derivatives as Potential Anticancer Agents. *Front. Chem.* **2020**, *8*. <https://doi.org/10.3389/fchem.2020.00495>.
9. Rossino, G.; Raimondi, M. V.; Rui, M.; Di Giacomo, M.; Rossi, D.; Collina, S. PEG 400/Cerium Ammonium Nitrate Combined with Microwave-Assisted Synthesis for Rapid Access to Beta-Amino Ketones. An Easy-to-Use Protocol for Discovering New Hit Compounds. *Molecules* **2018**, *23* (4), 775. <https://doi.org/10.3390/molecules23040775>.
10. Rui, M.; Rossino, G.; Coniglio, S.; Monteleone, S.; Scuteri, A.; Malacrida, A.; Rossi, D.; Catenacci, L.; Sorrenti, M.; Paolillo, M.; Curti, D.; Venturini, L.; Schepmann, D.; Wünsch, B.; Liedl, K. R.; Cavaletti, G.; Pace, V.; Urban, E.; Collina, S. Identification of Dual Sigma1 Receptor Modulators/Acetylcholinesterase Inhibitors with Antioxidant and Neurotrophic Properties, as Neuroprotective Agents. *Eur. J. Med. Chem.* **2018**, *158*, 353–370. <https://doi.org/10.1016/j.ejmech.2018.09.010>.