

PERSONAL INFORMATIONS



Giacomo Rossino

University of Pavia
Department of Drug Sciences
Via Taramelli 12, 27100 Pavia, Italy

0382 987911 +39 338 821 9307

giacomo.rossino@unipv.it

- <https://orcid.org/0000-0002-1008-5736>
- Scopus ID: 57194380750
- [linkedin.com/in/giacomo-rossino-068415b8](https://www.linkedin.com/in/giacomo-rossino-068415b8)
- <https://labmedchem.unipv.it/index.php/people/>

Sex Male | Date of birth 17/09/1992 | Nationality Italian

Current Position: assistant professor (RTDA)

WORK EXPERIENCE

01/02/2022 - ongoing

Assistant professor (RTDA)

University of Pavia, Department of Drug Sciences

- SSD CHEM-07/A (formerly SSD CHIM/08) – Project title: sustainable research of novel anticancer drugs.
Research project funded by MUR (Ministero dell'Università e della Ricerca) and Programma Operativo Nazionale (PON) 2014-2020 "Ricerca e Innovazione" 2014-2020 - Asse IV "Istruzione e ricerca per il recupero" – Azione IV.6 – "Contratti di ricerca su tematiche Green".

Research activity Medicinal Chemistry, Drug Discovery, Green Chemistry

01/04/2020 – 31/01/2022

Post-doc Researcher

University of Pavia, Department of Drug Sciences

- SSD CHIM/08 – Project title: Design, synthesis and biological validation of new Sigma receptors modulators
- SSD CHIM/08 – Project title: Design and synthesis of heterodimeric S1R-TSPO ligands as pharmacological tools for ALS treatment.

Research activity 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.
Extra-curricular Internship performed as part of the "job gate" project promoted by university colleges of Pavia.

Business or sector Quality control laboratory of a pharmaceutical company

EDUCATION AND TRAINING

2020 – 2021

II Level Master "Progettazione e Sviluppo di Farmaci"

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**

EP4163273A1 Substituted vinyl piperazine-piperidine urea derivatives as anticancer agents. The claimed compounds are active against particularly aggressive/orphan tumors (e.g. glioblastoma, multiple myeloma, pancreatic cancer) and have been prepared following green chemistry techniques.

Teaching

Course for the students of Medicinal Chemistry and Pharmaceutical Technology, titled "*Green Synthetic Strategies in Medicinal Chemistry*" (2023).

Organic Chemistry course for the students of the Master Degree in Industrial Nanobiotechnologies for Pharmaceuticals (2023).

Lessons directed to II level Master students, on the applications of Green Chemistry to the synthesis of pharmaceuticals (2022 - present).

Seminars of Organic Chemistry for Pharmacy students (2020 - 2021).

Seminars of Medicinal Chemistry for Biotechnology students (2020 - 2021).

Supervision or co-supervision of nine experimental thesis (2020 - present).

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

English (fluent), Spanish (basic)

Job-related skills

Knowledge of the main 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.

Experience in mentoring and teaching to undergraduate students.

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.

Soft skills

Autonomy, adaptability, capacity to plan and organise, precision and attention to detail, lifelong learning, teamwork.

ADDITIONAL INFORMATION**Statement of Research Interests**

My research work is aimed at the design, synthesis and validation of new chemical entities as therapeutic tools and molecular probes for the study of biological pathways. The main therapeutic areas covered include neurodegeneration and cancer (with particular focus on orphan tumors). The Medicinal Chemistry projects I have been working on include the development and characterization of multitarget-directed ligands, bitopic ligands and chiral molecules. My current research interests also include the application of Green Chemistry principles to different drug discovery programs – to enhance their sustainability, safety and efficiency – and the exploration of novel approaches in Medicinal Chemistry, such as photopharmacology and targeting RNA-binding proteins.

Publications

total number of publications (Scopus): 27

average Impact Factor: 5.1

total number of citations: 139 (excluded self-citations)

H index (Scopus): 9

selected relevant publications:

1. Listro, R.; Marra, A.; Cavalloro, V.; Rossino, G.; Linciano, P.; Rossi, D.; Casali, E.; De Amici, M.; Mazzeo, G.; Longhi, G.; Fusè, M.; Dondio, G.; Pellavio, G.; Laforenza, U.; Schepmann, D.; Wünsch, B.; Collina, S.

- Sigma Receptor and Aquaporin Modulators: Chiral Resolution, Configurational Assignment, and Preliminary Biological Profile of RC752 Enantiomers. *J. Pharm. Biomed. Anal.* **2024**, 239, 115902. <https://doi.org/10.1016/j.jpba.2023.115902>.
2. Rossino, G.; Marchese, E.; Galli, G.; Verde, F.; Finizio, M.; Serra, M.; Linciano, P.; Collina, S. Peptides as Therapeutic Agents: Challenges and Opportunities in the Green Transition Era. *Molecules* **2023**, 28 (20), 7165. <https://doi.org/10.3390/molecules28207165>.
 3. Rossino, G.; Marra, A.; Listro, R.; Peviani, M.; Poggio, E.; Curti, D.; Pellavio, G.; Laforenza, U.; Dondio, G.; Schepmann, D.; Wünsch, B.; Bedeschi, M.; Marino, N.; Tesei, A.; Ha, H.-J.; Kim, Y.-H.; Ann, J.; Lee, J.; Linciano, P.; Di Giacomo, M.; Rossi, D.; Collina, S. Discovery of RC-752, a Novel Sigma-1 Receptor Antagonist with Antinociceptive Activity: A Promising Tool for Fighting Neuropathic Pain. *Pharmaceuticals* **2023**, 16 (7), 962. <https://doi.org/10.3390/ph16070962>.
 4. Linciano, P.; Sorbi, C.; Rossino, G.; Rossi, D.; Marsala, A.; Denora, N.; Bedeschi, M.; Marino, N.; Miserocchi, G.; Dondio, G.; Peviani, M.; Tesei, A.; Collina, S.; Franchini, S. Novel S1R Agonists Counteracting NMDA Excitotoxicity and Oxidative Stress: A Step Forward in the Discovery of Neuroprotective Agents. *Eur. J. Med. Chem.* **2023**, 249, 115163. <https://doi.org/10.1016/j.ejmech.2023.115163>.
 5. 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>.
 6. 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>.
 7. 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>.
 8. 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>.
 9. 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>.
 10. 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>.

15/05/2024, Pavia

Signature

