HOSTING GROUPS FOR INTERNATIONAL MOBILITY

MedWave LAB Laboratory of Medicinal Chemistry and Microwave Technologies for the Synthesis and Extraction of Bioactive Compounds

The research of Professor M.V. Raimondi focuses on the synthesis of heterocyclic compounds with antitumor and antimicrobial activity. She is specialized in microwave-assisted pharmaceutical synthesis using an Anton Paar Monowave 300, developing innovative and efficient protocols for the preparation of bioactive molecules. In parallel, she applies environmentally sustainable techniques for purification processes, particularly medium-pressure liquid chromatography (CombiFlash Rf200), to minimize the environmental impact of chemical operations. A key area of her work involves the microwave-assisted synthesis of pyrrolomycin analogues, which have shown antimicrobial activity and promising antitumor properties. In addition, she is involved in the design and synthesis of small molecules targeting SIRT6, a sirtuin involved in genomic stability and metabolic regulation, with the objective of developing novel therapeutic strategies for diffuse large B-cell lymphoma (DLBCL). Finally, she also engaged in the extraction and purification of natural biomolecules from various biological matrices, using microwave technology (Anton Paar Multiwave 3000) to enhance both yield and selectivity. Her multidisciplinary approach integrates synthetic organic chemistry, green technologies, and molecular pharmacology, aiming to contribute to the discovery and development of innovative therapeutic agents.



Prof. Maria Valeria Raimondi, PhD Associate Professor in Medicinal Chemistry

Selected publications:

- Preliminary Data on the Antiviral Activity of Helleborus bocconei subsp. intermedius Root Extracts Against Animal Herpesviruses, Microorganisms, 13(4), Article number 891 (2025) (<u>http://doi.org/10.3390/microorganisms13040891</u>)
- Citrus wastewater as a source of value-added products: Quali-quantitative analysis and in vitro screening on breast cancer cell lines, Arch. Pharm., 357(12), Article number 2400530 (2024) (<u>http://doi.org/10.1002/ardp.202400530</u>)
- Exploring the anticancer activity and the mechanism of action of pyrrolomycins F obtained by microwave-assisted total synthesis, Eur. J. Med. Chem, 2535, Article number 115339 (2023) (<u>http://doi.org/10.1016/j.ejmech.2023.115339</u>)
- Synthesis, biological evaluation, and molecular docking studies of aldotetronic acid-based LpxC inhibitors, Bioorg. Chem, 131, Article number 106331 (2023) (<u>http://doi.org/10.1016/j.bioorg.2022.106331</u>)
- Pyrrolidine in Drug Discovery: A Versatile Scaffold for Novel Biologically Active Compounds, Top. Curr. Chem, 379(5), Article number 34 (2021) (<u>http://doi.org/10.1007/s41061-021-00347-5</u>)