Curriculum vitae of
Prof. MARCO MOR

Professor of medicinal chemistry
Dipartimento di Scienze degli Alimenti e del Farmaco
Università degli Studi di Parma

Laurea (M.S.) in Pharmaceutical Chemistry and Technology (Chimica e Tecnologia Farmaceutiche, C.T.F.) *cum laude* at the Faculty of Pharmacy, University of Parma (Italy) in 1990. Researcher at the Faculty of Pharmacy, University of Parma in 1993. Associate Professor of Medicinal Chemistry in 2000. Full Professor of Medicinal Chemistry at the Faculty of Pharmacy since 2001.

2005-2008 President of the teacher board of the "Corso di Laurea Specialistica in C.T.F." at the University of Parma from 2005 to 2008.

2011-2013: Coordinator of the PhD course (Dottorato) of "Progettazione e sintesi di molecole biologicamente attive" (Design and synthesis of bioactive compounds)

2013-2024: Coordinator of of the PhD course (Dottorato) of "Scienze del farmaco, delle biomolecole e dei prodotti per la salute" (Drugs, biomolecules and health products) at the Dipartimento di Scienze degli Alimenti e del Farmaco in Parma.

2017-2024: Director of the PhD School (Scuola dottorale) of "Scienze biologiche, farmaceutiche e dell'alimentazione" (Biological, Pharmaceutical and Food Sciences) at University of Parma.

2018-2021: President of the Committee for Chemical Sciences at the University of Parma

2021-2023: President of the Commission for national habilitation for academica career (ASN)

2023-present: Vice-directori of the Dipartimento di Eccellenza in Scienze degli Alimenti e del Farmaco, University of Parma.

2011-2017: Member of the Scientific Board of the European School of Medicinal Chemistry.

Member of the Editorial Board of the scientific journals *ChemMedChem* and *Cannabis and Cannabinoid Research*.

Member of the Executive Commitee of the ULLA Consortium (European University Consortium for Pharmaceutical Sciences).

He is author of more than 240 articles on international scientific journals, which received more than 11000 citations (H-index 56, Scopus). He is inventor in more than 15 patents granted in USA, Canada, Italy and other states.

Research activity

Main interest: design of new drugs and study of structure-activity relationships for biologically active compounds.

He leads the group of Drug Design and Discovery at the Dipartimento di Scienze degli Alimenti e del Farmaco, University of Parma. The research activity of the group is focused on the application to medicinal chemistry projects of quantitative structure-activity relationships (QSAR), molecular modeling, chemical synthesis and bioanalytics techniques. The expertise of Prof Mor and his group includes statistical uni- and multivariate analysis of QSAR, pharmacophore model building and refinement; 3D-QSAR, homology modeling for drug targets; molecular docking, molecular dynamics and enhanced-sampling simulations, hybrid QM/MM methods; design, synthesis and optimization of covalent drugs; pharmacokinetic analysis and optimization of metabolic stability for bioactive compounds. The research lines mainly pursued in recent times are: 1) design and development of novel ligands at the melatonin receptors; 2) design and development of drugs modulating the

endocannabinoid system; 3) design and development of covalent drugs that selectively target specific protein residues.

From 1990 to 1993 Marco Mor collaborated with the drug design group of Glaxo Ricerche (Verona), led by Dott. Aldo Feriani, where he was trained in the application of QSAR to drug design. After this experience, he founded the group of Drug Design and Discovery at the University of Parma.

Collaborations with the Medicinal Chemistry group at the University of Urbino on the design and synthesis of melatonin receptor ligands led to the design and development of several new classes of MT1- and MT2-selective new antagonists, within a synergistic effort applying computer-aided drug design and synthetic medicinal chemistry. Pharmacophore and QSAR models allowed detailed description of the structural requirements for binding and intrinsic activity at the melatonin receptors, and have been succesfully applied to the design of several classes of new active compounds. Some of them are among the most potent and selective ligands known, and are currently emplyed to explore the therapeutic potential of melatonin receptor ligands on sleep disorder, neuroprotection and cancer.

Collaboration with Prof. Daniele Piomelli at the University of California-Irvine has led to the discovery and development, in 2003, of the first class of orally-active inhibitors of the enzyme FAAH. This enzyme is involved in the metabolism of anandamide, a lipid signalling compound belonging to the class of the so-called endogenous cannabinoids, and FAAH inhibitors present interesting therapeutical opportunities for the treatment of anxiety, pain and depression. The molecular mechanism of FAAH, and its relevance for the design of drug-like inhibitors, has been investigated in detail by computational and experimental approaches. Within the field of endo-cannabinoids, the three groups have also investigated other enzymes involved in lipid signal metabolism, like monoacylglycerole lipase, NAAA and NAPE-PLD, designing and discovering several classes of prototypical inhibitors of each enzyme. In particular he participated to the discovery and development of the first systemically active inhibitors of the enzyme NAAA, which have a great potential in the treatment of different inflammatory conditions, due to their ability to improve tissue levels of the endogenous antiinflammatory palmitoylethanolamide.

More recently, the Drug Design and Discovery group setup collaborations with groups involved in biological studies on antitumor agents, both at pre-clinical and clinical stages. This led to the design and synthesis of novel covalent EGFR inhibitors, to significant advances in the characterization of their molecular mechanism and of novel resistance mechanisms. The network coordinated by the oncologist Dr. Marcello Tiseo has received an AIRC grant in 2018 to develop new strategies against resistance to osimertinib in lung cancer. The Group also participated to the discovery of the first small-molecule inhibitor of FGF-FGFR binding with the mechanism of FGF trap, and is now involved in the design, synthesis and SAR exploration of antiproliferative agents which sequestrate growth factors.

Within the field of drug structure-property relationships, much attention is dedicated by the group to the study of physicochemical and pharmacokinetic (ADME) properties of bioactive compounds, studying the relationships between drug structure and their access to the CNS and metabolic stability.

Parma July 23rd, 2024