

Curriculum vitae

MARIA DICHIARA



Date of birth: 20 April 1991

Place of birth: Enna

Nationality: Italian

Tel: +39-3668631299

E-mail: maria.dichiarà@unict.it

EDUCATION AND PROFESSIONAL EXPERIENCES

Ph.D. in Pharmaceutical Biotechnology Department of Drug Science, University of Catania (31 October 2017–present). Research field: development of sigma receptors ligands for cancer treatment and analgesia. Supervisor: Dr. E. Amata.

Visiting Ph.D. student Internship - ETH Zürich (September 2018 – March 2019) HCI G398 - Institut für Pharmazeutische Wissenschaften (Switzerland). DNA-encoded chemical libraries, protein expression and purification. Supervisor: Prof. D. Neri.

Research volunteer Department of Drug Science, University of Catania. Design and synthesis of sigma receptors ligands (October 2016 – October 2017). Supervisor: Dr. E. Amata.

Master degree in Pharmacy Department of Drug Science, University of Catania (May 2016). Final Mark **110/110 cum laude**. Dissertation: Tumor targeting sigma-2 receptor ligands: development of new molecular hybrids as anticancer therapeutics. Supervisors: Prof. O. Prezzavento and Dr. E. Amata.

Visiting master student Traineeship - Erasmus+ Unipharm Graduates (April 2015 – October 2015). Laboratoire de Pharmacognosie UMR-CNRS 8638, Faculté de Pharmacie – Université Paris Descartes, Paris (France). The project involved the development of a new series of aucubin derivatives and the study of their chemical reactivity in coupling reactions. Supervisor: Prof. B. Deguin.

FELLOWSHIPS

- Prague-Weizmann School on Drug Discovery fellowship assigned by the Scientific Committee to attend the 6th Prague-Weizmann Summer School Advances in Drug Discovery: Drug discovery and development from basic research through preclinical to clinical phases. Prague, Czech Republic, September 26, 2019.
- European School of Medicinal Chemistry (ESMEC) fellowship assigned by the Division of Medicinal Chemistry of the Italian Chemical Society to attend the XXXVIII Advanced Course of Medicinal Chemistry and Seminar for PhD students. Urbino, July 1–5, 2018.

PUBLICATIONS

1. Floresta G., **Dichiarà M.**, Gentile D., Prezzavento O., Marrazzo A., Rescifina A, Amata E.. Morphing of Ibogaine: A Successful Attempt into the Search for Sigma-2 Receptor Ligands. Int J Mol Sci. 2019 Jan 23;20(3).
2. Sorrenti V., Pittalà V., Romeo G., Amata E., **Dichiarà M.**, Marrazzo A., Turnaturi R., Prezzavento O., Barbagallo I., Vanella L., Rescifina A., Floresta G., Tibullo D., Di Raimondo F., Intagliata S., Salerno L.. Targeting heme Oxygenase-1 with hybrid compounds to overcome Imatinib resistance in chronic myeloid leukemia cell lines. Eur J Med Chem. 2018 Oct 5;158:937-950.
3. Floresta G., Amata E., **Dichiarà M.**, Marrazzo A., Salerno L., Romeo G., Prezzavento O., Pittalà V.,

- Rescifina A.. Identification of Potentially Potent Heme Oxygenase 1 Inhibitors through 3D-QSAR Coupled to Scaffold-Hopping Analysis. *ChemMedChem*. 2018 Jul 6;13(13):1336-1342.
- Floresta G., Pistarà V., Amata E., **Dichiara M.**, Damigella A., Marrazzo A., Prezzavento O., Punzo F., Rescifina A.. Molecular modeling studies of pseudouridine isoxazolidinyl nucleoside analogues as potential inhibitors of the pseudouridine 5'-monophosphate glycosidase. *Chem Biol Drug Des*. 2018 Feb;91(2):519-525.
 - Amata E., Rescifina A., Prezzavento O., Arena E., **Dichiara M.**, Pittalà V., Montilla-García Á., Punzo F., Merino P., Cobos E.J., Marrazzo A.. (+)-Methyl (1R,2S)-2-[[4-(4-chlorophenyl)-4-hydroxypiperidin-1-yl]methyl]-1-phenylcyclopropanecarboxylate [(+)-MR200] Derivatives as Potent and Selective Sigma Receptor Ligands: Stereochemistry and Pharmacological Properties. *J Med Chem* 2018, 61(1):372-384, 10.
 - Arena E., **Dichiara M.**, Floresta G., Parenti C., Marrazzo A., Pittalà V., Amata E., Prezzavento O.. Novel Sigma-1 receptor antagonists: from opioids to small molecules: what is new? *Future Med Chem*. 2018 Jan;10(2):231-256.
 - Dichiara M.**, Prezzavento O., Marrazzo A., Pittalà V., Salerno L., Rescifina A., Amata E.. Recent advances in drug discovery of phototherapeutic non-porphyrinic anticancer agents. *Eur J Med Chem*. 2017 Dec 15;142:459-485
 - Amata E., **Dichiara M.**, Arena E., Pittalà V., Pistarà V., Cardile V., Graziano A.C.E., Fraix A., Marrazzo A., Sortino S., Prezzavento O.. Novel Sigma Receptors Ligands-Nitric Oxide Photodonor: Molecular Hybrids for Double-Targeted Antiproliferative Effect. *J Med Chem* 2017, 60(23):9531-9544.
 - Amata E., Marrazzo A., **Dichiara M.**, Modica M.N., Salerno L., Prezzavento O., Nastasi G., Rescifina A., Romeo G., Pittalà V.. Heme Oxygenase Database (HemeOxDB) and QSAR Analysis of Isoform 1 Inhibitors. *ChemMedChem*. 2017 Nov 22;12(22):1873-1881.
 - Floresta G., Rescifina A., Marrazzo A., **Dichiara M.**, Pistarà V., Pittalà V., Prezzavento O., Amata E.. Hyphenated 3D-QSAR statistical model-scaffold hopping analysis for the identification of potentially potent and selective sigma-2 receptor ligands. *Eur J Med Chem* 2017, 139:884-891.
 - Dichiara M.**, Amata E., Rescifina A., Prezzavento O., Floresta G., Parenti C., Pittalà V., Marrazzo A.. Synthesis and evaluation of haloperidol metabolite II prodrugs as anticancer agents. *Future Med Chem*. 2017 Oct;9(15):1749-1764.
 - Floresta G., Pistarà V., Amata E., **Dichiara M.**, Marrazzo A., Prezzavento O., Rescifina A.. Adipocyte fatty acid binding protein 4 (FABP4) inhibitors. A comprehensive systematic review. *Eur J Med Chem*. 2017 Sep 29;138:854-873.
 - Amata E., Marrazzo A., **Dichiara M.**, Modica M.N., Salerno L., Prezzavento O., Nastasi G., Rescifina A., Romeo G., Pittalà V.. Comprehensive data on a 2D-QSAR model for Heme Oxygenase isoform 1 inhibitors. *Data Brief*. 2017 Sep 21;15:281-299.
 - Rescifina A., Floresta G., Marrazzo A., Parenti C., Prezzavento O., Nastasi G., **Dichiara M.**, Amata E.. Development of a Sigma-2 Receptor affinity filter through a Monte Carlo based QSAR analysis. *Eur J Pharm Sci*. 2017 Aug 30;106:94-101.
 - Dichiara M.**, Marrazzo A., Prezzavento O., Collina S., Rescifina A., Amata E.. Repurposing of Human Kinase Inhibitors in Neglected Protozoan Diseases. *ChemMedChem* 2017, 12(16):1235-1253.
 - Rescifina A., Floresta G., Marrazzo A., Parenti C., Prezzavento O., Nastasi G., **Dichiara M.**, Amata E.. Development of a Sigma-2 Receptor affinity filter through a Monte Carlo based QSAR analysis. *Eur J Pharm Sci* 2017, 106:94-101.

PROCEEDINGS AND CONFERENCE PARTICIPATIONS

- Development of novel H₂S-donor sigma receptor hybrids for the management of pain. **Dichiara M.**, Pitino C., Barbaraci C., Artacho-Cordón A., Cobos E. J., Marrazzo A., Amata E. 11th Joint Meeting on Medicinal Chemistry, Prague (Czech Republic), June 27–30, 2019.
- Development of NO-releasing sigma receptor hybrids as anticancer agents. **Dichiara M.**, Acquaviva

- R., La Mantia A., Di Giacomo C., Arena E., Floresta G., Marrazzo A., Amata E., Prezzavento O.. MedChem19 - Paul Ehrlich Euro-PhD Network & MuTaLig COST Action meeting 2019, Catanzaro (Italy), June 13–15, 2019. Oral communication.
3. Nuovi inibitori dell'eme ossigenasi-1 a struttura imidazolica. Ciaffaglione V., Fallica A.N., Leonardi C., Intagliata S., **Dichiara M.**, Barbaraci C., Carota G., Salerno L.. Congresso Congiunto delle Sezioni Sicilia e Calabria della Società Chimica Italiana SCI 2019, Divisione di Chimica Farmaceutica, Palermo (Italy), March 1–2, 2019.
 4. Sintesi di derivati “NO-light activated” della ciprofloxacina e della norfloxacina come potenziali agenti disperdenti del biofilm. Fallica A.N., Ciaffaglione V., Leonardi C., **Dichiara M.**, Barbaraci C., Catalfo A., Finocchiaro G., De Guidi G., Amata E., Marrazzo A.. Congresso Congiunto delle Sezioni Sicilia e Calabria della Società Chimica Italiana SCI 2019, Divisione di Chimica Farmaceutica, Palermo (Italy), March 1–2, 2019.
 5. La modellistica molecolare applicata ai recettori Sigma-1 e Sigma-2: un excursus. Floresta G., Gentile D., **Dichiara M.**, Amata E., Rescifina A., Marrazzo A.. Congresso Congiunto delle Sezioni Sicilia e Calabria della Società Chimica Italiana SCI 2019, Divisione di Chimica Farmaceutica, Palermo (Italy), March 1–2, 2019.
 6. New selective sigma-1/HDACi prodrugs for neurodegenerative disorders. Barbaraci C., **Dichiara M.**, Turnaturi R., Fallica A.N., Arena E., Prezzavento O., Amata E., Marrazzo A.. MuTaLig COST ACTION CA15135 Annual meeting 2018, Valletta (Malta), October 18–19, 2018.
 7. Design, synthesis, and pharmacological evaluation of NO donor-sigma receptors hybrids for the treatment of cancer. Dichiara M., Barbaraci C., Gentile D., Intagliata S., Pittalà V., Arena E., Fraix A., Farina G., Prezzavento O., Amata E., Marrazzo A.. Italian-Spanish-Portuguese Joint Meeting in Medicinal Chemistry - MedChemSicily2018, Palermo (Italy), July 17–20, 2018. Poster presentation.
 8. Design and synthesis of H₂S releasing-sigma receptor hybrids for the management of pain. **Dichiara M.** European School of Medicinal Chemistry (ESMEC) - XXXVIII Advanced Course of Medicinal Chemistry and Seminar for PhD students. Urbino (Italy), July 1–5, 2018. Poster presentation.
 9. Targeting the hydrophobic heme oxygenase-1 western region for the identification of novel and selective azole-based inhibitors. **Dichiara M.**, Modica M., Leonardi C., Margani F., Ciaffaglione V., Fallica A.N., Floresta G., Gentile D., Cosenza J., Pittalà V.. Congresso Congiunto delle Sezioni Sicilia e Calabria SCI 2018, Divisione di Chimica Farmaceutica, Catania (Italy), February 9–10, 2018.
 10. Development of sigma receptors nitric oxide photodonor ligands with antiproliferative activity. Amata E., Marrazzo A., **Dichiara M.**, Arena E., Russo E., Fraix A., Modica M.N., Pittalà V., Sortino S., Prezzavento O.. XXVI Congresso Nazionale della Società Chimica Italiana, Divisione di Chimica Farmaceutica, Paestum (Italy), September 10–14, 2017.
 11. Tumor targeting sigma receptor ligands: development of new molecular hybrids as anticancer therapeutics. **Dichiara M.**, Amata E., Prezzavento O., Arena E., Sortino S., Fraix A., Marrazzo A., Aricò G.. WorkShop delle Sezioni Sicilia e Calabria 2016-17 – Società Chimica Italiana, Divisione di Chimica Farmaceutica, Messina (Italy), February 9–10, 2017. Poster presentation.

SUMMER SCHOOL AND COURSES

- Radiation protection and safety of radiation sources – SPPR, University of Catania, July 16, 2019.
- Training on animal experimentation (theoretical and practical course) – CAPIR, University of Catania, June 20, 2019.
- European School of Medicinal Chemistry (ESMEC) - Urbino, July 1–5, 2018.

SKILLS AS SUPERVISOR

Experience as assistant in the laboratory of:

- Pharmaceutical Biotechnology (A.A. 2018 – 2019, University of Catania).
- General Chemistry (Autumn semester 2018, ETHZ).
- Analysis of Toxicological Chemistry I (A.A. 2016 – 2017, 2017 – 2018, University of Catania).

REFERENCES

Dr. Emanuele Amata +39 095 7384102, eamata@unict.it
Dr. François-Hugues Porée + 33 (0)153 731579, francois-hugues.poree@parisdescartes.fr
Prof. Dr. Dario Neri +41 44 633 74 01, dario.neri@pharma.ethz.ch

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Maria Dichiarà