

PERSONAL INFORMATION

Samantha Caputo



PROFILE/OBJECTIVE

Postdoc Researcher with 2 years of medicinal chemistry research experience in pharmaceutical R&D, possessing expert knowledge of drug discovery research and organic synthesis of drug-like small molecules. Ph.D training in organic chemistry methodology and optimization of synthesis process. Proven successful research scientist in designing drug candidates, planning and performing laboratory experiments, analysing data and communicating results, in both internal and external forums. Seeking a working role that combines laboratory experience in synthetic organic chemistry with Therapeutic Discovery, Cosmetic Research and Medicinal Sciences.

EDUCATION AND TRAINING

(from) December 01st, 2019
(to) present

Research fellow

Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa, Italy

Project Title: "Application of carbocatalysis in MCRs involving amines and carbonyl compounds".

Supervisors: L. Moni

(from) January 01st, 2017
(to) November 30th, 2019

Post Doc

Istituto Italiano di Tecnologia, D3 Validation, Genoa, Italy

Project Title: "Synthesis and Structure-Activity Relationship (SAR) Studies for neurodegenerative diseases".

Supervisors: R. Scarpelli, A. Reggiani

(from) January 01st, 2016
(to) September 15st, 2016

Visiting student to Barcelona University

Laboratory of Organic Chemistry, Faculty of Pharmacy, University of Barcelona, Barcelona Science

Project Title: " Multiple Groebke-Blackburn-Bienaymé multicomponent reactions: scope, selectivity and synthetic access to complex heterocyclic scaffolds".

Supervisor: Prof. R. Lavilla

A handwritten signature in black ink, appearing to be 'SC'.

- (from) January 01st, 2014
(to) 31st December, 2016
- Doctorate School in "Sciences and Technologies of Chemistry and Materials" XXIX cycle (curriculum: "Sciences and Technologies of Chemistry")
Department of Chemistry and Industrial Chemistry, University of Genoa, Genoa, Italy
- The Ph.D. work is mainly focusing on the study of diastereoselective Ugi reaction, starting from *enantiomerically pure* input obtained by organocatalysis.
In particular, aim of this project is to explore diastereoselective Ugi reaction by variation of reaction parameters together with an evaluation of a diverse set of reaction substrates.
In the realm of Diversity Oriented Synthesis I am employ Ugi adducts as substrates in the synthesis of heterocyclic compounds, through secondary transformations.
Advisor Prof. L. Banfi (University of Genoa).
- (from) October, 2011 (to)
October 2013
- Master Degree in "Chemical Sciences", 110/110 cum laude
University of Ferrara, Department of Chemistry and Pharmaceutical Sciences, Italy.
- Master thesis title: "Synthetic and mechanistic aspects of oxa-Pictet-Spengler reaction".
 - Supervisor: Prof. C. Trapella
 - Main subjects covered: Organic Chemistry courses such as Advanced Organic Chemistry, Modern Organic Chemistry Synthesis and Reaction's mechanism in Organic Chemistry, Spectroscopic and Spectrometric techniques, Polymer Chemistry, Photochemistry, Environmental analytical chemistry, and also some Inorganic, Analytical and Theoric Chemistry courses.
- (from) October 2008
(to) October 2011
- Bachelor degree in "Chemistry", 105/110.
University of Ferrara, Department of Chemistry, Italy.
- Master thesis title: "Synthesis of tetrahydro thiophene compounds via one-pot reactions".
 - Supervisor: Prof. S. Benetti
 - Main subjects covered: basic chemistry, mathematics and physics courses, Environmental Chemistry, Chemistry of Cultural Heritage and some specific organic chemistry courses such as Organic Chemistry of Natural compound and Pharmaceutical Chemistry in Organic Chemistry.
- (from) 2003
(to) 2008
- Diploma, 100/100
Socio-psyco-pedagogic Lyceum "Don G. Fogazzaro", Vicenza, Italy.



PERSONAL SKILLS

Mother tongue(s) Italian

| Other language(s) | UNDERSTANDING | | SPEAKING | | WRITING |
|-------------------|---------------|---------|--------------------|-------------------|---------|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | B1 | C1 | B1 | B1 | B2 |

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

- Social skills
- Ability of working in team
 - Strong tendency to adaptation and integration into the working environment
 - Openness and curiosity into the researches carried out by other groups in different fields
 - Organisational abilities

- Job-related skills
- Organic synthesis (microwave, H-Cube®)
 - purification of organic compounds (traditional and automatic flash chromatography, distillation, precipitation, crystallization, ion exchange chromatography)
 - characterization of organic compounds (UPLC-MS, GC-MS, ¹H-NMR, ¹³C-NMR and bidimensional NMR experiments)

- Computer skills
- Microsoft Office Package (Word, Excel, PowerPoint)
 - NMR processing and visualization software package (MestreNova)
 - Molecular drawing programs (ChemDraw)
 - Web-based tool for the retrieval of chemistry information and data from published literature (Reaxys, SciFinder)
 - ECDL IT-Security

Driving licence Italian B driving licence



ADDITIONAL INFORMATION

- Publication
- Caputo, S.; Basso, A.; Moni, L.; Riva, R.; Rocca, V. and Banfi, L., Diastereoselective Ugi reaction of chiral 1,3-aminoalcohols derived from an organocatalytic Mannich reaction. *Beilstein J. Org. Chem.* **2016**, *12*, 139–143.
 - Caputo, S.; Basso, A.; Moni, L.; Riva, R.; Galatini, A.; Lambruschini, C. and Banfi, L., Diversity-Oriented Synthesis of various enantiopure heterocycles by coupling organocatalysis with Multicomponent Reactions. *Eur. J. Org. Chem.* **2017**.
 - Ghashghaei, O.; Caputo, S.; Sintès, M.; Revés, M.; Kielland, N.; Estarellas, C.; Luque, F. J.; Aviñó, A.; Eritja, R.; Serna-Gallego, A.; Marrugal-Lorenzo, J., A.; Pachón, J.; Sánchez-Céspedes, J.; Treadwell, R.; de Moliner, F.; Vendrell, M.; Lavilla, R., Multiple Multicomponent Reactions: Unexplored Substrates, Selective Processes, and Versatile Chemotypes in Biomedicine. *Chem. Eur. J.* **2018**, *24*, 1-10.
 - Di Martino, S.; Tardia, P.; Cilibrasi, V.; Caputo, S.; Mazzonna, M.; Russo, D.; Penna, I.; Realini, N.; Margaroli, N.; Migliore, M.; Pizzirani, D.; Ottonello, G.; Bertozzi, S. M.; Armirotti, A.; Nguyen, D.; Sun, Y.; Bongarzone, E.R.; Lansbury, P.; Liu, M.; Skerlj, R., and Scarpelli, R. Lead Optimization of Benzoxazolone Carboxamides as Orally Bioavailable and CNS Penetrant Acid Ceramidase Inhibitors. *Journal of Medicinal Chemistry* **2020**, *63* (7), 3634-3664.
 - Caputo, S.; Di Martino, S.; Cilibrasi, V.; Tardia, P.; Mazzonna, M.; Russo, D.; Penna, I.; Summa, M.; Bertozzi, S.M.; Realini, N.; Margaroli, N.; Migliore, M.; Ottonello, G.; Liu, M.; Lansbury, P.; Armirotti, A.; Bertorelli, R.; Ray, S.S.; Skerlj, R. and Scarpelli, R. Design, Synthesis, and Biological Evaluation of a Series of Oxazolone Carboxamides as a Novel Class of Acid Ceramidase Inhibitors. *Journal of Medicinal Chemistry* **2020**, *63*(24), 15821-15851.
- Conferences/
Schools
- "Organocatalysis and introduction to practical computational organic chemistry" Prof. P. Merino, Department of Chemical and Pharmaceutical Sciences, University of Ferrara (30th October, 6th, 13th, 20th November, 2013).
 - XXXIX "A. Corbella" International Summer School on Organic Synthesis (Gargnano, Brescia, Italy). June 15th – 19th, 2014.
 - XL "A. Corbella" International Summer School on Organic Synthesis (Gargnano, Brescia, Italy). June 14th – 18th, 2015.
 - XXXVI Convegno della Divisione di Chimica Organica (Bologna, Italy). September 13th-17th, 2015.
 - XVII tetrahedron Symposium (Sitges, Barcelona, Spain). June 28th – July 1th, 2016.
 - XXXVII Convegno della Divisione di Chimica Organica (Venezia, Italy). September 18th-22th, 2016.
 - Ischia Advanced School of Organic Chemistry (Ischia, Italy). September 25th – 29th, 2016.
 - XIX Tetrahedron Symposium (Riva del Garda, Italy). June 26th – 29th, 2018.



Posters

- Caputo, S.; Basso, A.; Moni, L.; Riva, R.; Rocca, V. and Banfi, L., Diastereoselective Ugi reaction followed by intramolecular nucleophilic substitutions: convergent multicomponent synthesis of diverse heterocyclic scaffolds. XXXVI Convegno della Divisione di Chimica Organica (Bologna, Italy) and XXXVII Convegno della Divisione di Chimica Organica (Venezia, Italy).
- Caputo, S.; Ghashghaei, O.; Revés, M. and Lavilla, R. "Groebke-Blackburn-Bienaymé multicomponent reaction: a facile protocol for the synthesis of n-fused imidazoles heterocycles". Ischia Advanced School of Organic Chemistry (Ischia, Italy).

Job-related activities

- Teaching tutor of the class "Organic Chemistry", Department of Life Sciences and Biotechnology, University of Ferrara (academic year 2012/13).
- Two months post-degree work experience in the Department of Chemical and Pharmaceutical sciences laboratories, University of Ferrara (from October to December 2013).
- Lab teaching assistant of the class "Organic Chemistry and Laboratory", Department of Chemistry and Industrial Chemistry, University of Genoa (academic year 2014/15, 2015/2016 and 2016/2017).

Scholarship

- 2014-2016 Italian Chemistry Society (SCI)

Samantha Caputo