

CURRICULUM VITAE Dr. Gabriele Lupidi

University of Camerino

School of Science and Technology – Chemistry Division

Via S. Agostino, 1 62032 (MC)

EDUCATION

Dr. Gabriele Lupidi began his studies in Chemistry in 2009 at the University of Camerino (Italy), where he received his bachelor's degree in 2013, with the dissertation of the thesis entitled: "*Biologically Active Small Molecules: Eco-sustainable Strategy for the Synthesis of Omega-3*", under the guidance of Professor Enrico Marcantoni. In 2015 he received his master degree at the same university, with the dissertation thesis: "*New synthetic approach to 1,4-asymmetrically functionalized B-cyclodextrins as drug carriers and receptor mimics*", under the guidance of Professor Enrico Marcantoni. During this period, he spent 6 months in Portugal, at the Instituto Superior Técnico (Lisbon, Portugal) thank to the Double Degree project promoted by University of Camerino. In December 2015 he started his PhD studies in collaboration with Dompé Farmaceutici S.p.A. and in March 2019 he obtained the PhD degree in Chemical and Pharmaceutical sciences at the University of Camerino, with a thesis "*Functionalization of Cyclic Structures for Advanced Biological and Pharmaceutical Applications*". During his PhD, his work was focused on the synthesis of cyclic and heterocyclic structures from acyclic precursors, and in the selective functionalization of heterocyclic molecules. In 2018, he spent 6 months as visiting PhD student in the organic chemistry laboratory of Professor Giovanni Poly at the Université Pierre et Marie Curie (Paris, France). During this period, Dr Gabriele Lupidi worked on the selective C-3 functionalization of furan ring in furfural and its derivative via Directed *ortho* Metalation approach. From April 2019 to December 2019, he received a scholarship at University of Camerino on "*Modification of the packaging polymer by adding a new antioxidant molecule that can be released upon contact with the meat*" under the supervision of Professor Enrico Marcantoni in collaboration with Elettrogalvanica Settimi S.r.l. Working on this project, he could improve his skills in synthesis of polymeric matrices working on the chemical functionalization of a biobased polycarbonat. Since January 2020, Gabriele Lupidi is a postdoctoral fellow in the laboratory of Professor Marino Petrini. His research interests include synthesis and functionalization of heterocyclic systems, with particular interest for the chemistry of indoles, and reactivity of nitro compounds focusing on new synthetic methodologies using more environmentally friendly approaches.

TEACHING ACTIVITIES

- TUTOR of Food Chemistry

In 2016, he supervised the laboratory course of Prof. Dennis Fiorini in Food Chemistry.

- TUTOR of Organic Chemistry 1

In 2017, he supervised the laboratory course of Dr. Fabrizio Papa in Organic Chemistry 1.

In 2019, he supervised the laboratory course of Dr. Serena Gabrielli in Organic Chemistry 1.

In 2020, he supervised the laboratory course of Dr. Serena Gabrielli in Organic Chemistry 1.

- TUTOR of Organic Chemistry 2

In 2018/2019, he supervised the laboratory course of Prof. Cristina Cimorelli in Organic Chemistry 2.

- LECTURES ORGANIC CHEMISTRY

During his PhD, in 2017, he did 10 hours of lessons in Organic Chemistry 2 course of Prof. Enrico Marcantoni.

SUPERVISION OF STUDENTS

- 2015-2016 Loris Tavoloni "Importanza dei processi di riduzione in biosintesi e sintesi organica per una moderna medicina".

- 2015-2016 Dario Gentili "Sali di ammonio quaternari chirali legati alla nanocellulosa: sintesi ed applicazione come biocidi e antimicrobici".

- 2016-2017 Gianni Pacella "Importanza degli organoboronati in sintesi organica: nuova metodologia per la formazione di legami carbonio-carbonio promossa da CeCl₃".

- 2018-2019 Eleonora Spinozzi "Fluorine in the horizons of medicinal chemistry: synthesis of biologically active fluorinated small molecules".

INDUSTRIAL COLLABORATIONS

- Dompè Farmaceutici S.p.A (2015-2019) "*Study and functionalization of cyclodextrins as drug carriers and receptor mimics*".

- ElettroGalvanica Settini S.r.l. (April 2019 – December 2019) "*Modification of the packaging polymer by adding a new antioxidant molecule that can be released upon contact with the meat*".

LIST OF PUBLICATIONS

1. "Bioactivity and Structural Properties of Novel Synthetic Analogues of the Protozoan Toxin Climacostol" F. Buonanno, E. Catalani, D. Cervia, F. Proietti Serafini, S. Picchiatti, A. M. Fausto, S. Giorgi, G. Lupidi, F. V. Rossi, E. Marcantoni, D. Petrelli, C. Ortenzi *Toxins* **2019**, *11*(1),42. doi:10.3390/toxins11010042
2. "The Natural Compound Climacostol as a Prodrug Strategy Based on pH Activation for Efficient Delivery of Cytotoxic Small Agents" E. Catalani, F. Buonanno, G. Lupidi, S. Bongiorno, R. Belardi, S. Zecchini, M. Giovarelli, M. Coazzoli, C. De Palma, C. Perrotta, E. Clementi, G. Prantera, E. Marcantoni, C. Ortenzi, A. M. Fausto, S. Picchiatti, D. Cervia *Front. Chem.* **2019**, *28*, 463. doi: 10.3389/fchem.2019.00463
3. "Catalyst-Free Synthesis of Polysubstituted 5-Acylamino-1,3-Thiazoles via Hantzsch Cyclization of α -Chloroglycinates" M. Tomassetti, G. Lupidi, P. Piermattei, F. V. Rossi, S. Lillini, G. Bianchini, A. Aramini, M. A. Ciufolini, E. Marcantoni *Molecules* **2019**, *24*(21), 3846. doi: 10.3390/molecules24213846
4. "Synthesis of Nitro Alcohols by Riboflavin Promoted Tandem Nef-Henry Reactions on Nitroalkanes" G. Lupidi, A. Palmieri, M. Petrini *Adv. Synth. Catal.* **2021**, *363*, 742. doi: 10.1002/adsc.202001344
5. "Enantioselective Catalyzed Synthesis of Amino Derivatives Using Electrophilic Open-Chain N-Activated Ketimines" G. Lupidi, A. Palmieri, M. Petrini *Adv. Synth. Catal.* **2021**, *363*, 1. doi: 10.1002/adsc.202100292
6. "Visible Light Driven Competitive Stereo and Regio-Isomerization of (E)- β -Nitroenones" S. Protti, A. Palmieri, C. Carrera, C. Raviola, G. Maestri, M. Serra, G. Lupidi *ChemPhotoChem.* **2021**, *5*, 871. doi:10.1002/cptc.202100081

7. "A New and Effective One-Pot Synthesis of Polysubstituted Carbazoles Starting from β -Nitro- β,γ -Unsaturated-Ketones and Indoles" G. Lupidi, B. Bassetti, R. Ballini, M. Petrini, A. Palmieri *Asian J. Org. Chem.* **2021**, *10*, 2334. doi: 10.1002/ajoc.202100342.

BOOK CHAPTER

"*The Appropriate Acyclic Precursors to Build Biologically Active 5-acylamino-1,3-thiazoles*" M. Tomassetti, G. Lupidi, S. Gabrielli, F. V. Rossi, S. Lillini, G. Bianchini, A. Aramini, D. Canestrari, E. Marcantoni. *Current Advances in Chemistry and Biochemistry* Vol. 8, 22 June 2021, Page 40-56. doi:10.9734/bpi/cacb/v8/9618D. ISBN 978-93-91215-29-3 (Print). ISBN 978-93-91215-37-8 (eBook).

PATENT

"Polietilentereftalato (PET) funzionalizzato con attività antiossidante" – (*pending*) IT Patent Application No. 102021000021686 – Date of Application 10th August, 2021.

CONFERENCES, SYMPOSIUM AND SCHOOLS

2016 - XLI International Summer School in Organic Synthesis "A. Corbella", 12-16/06/2016, Gargnano (BS), Italy.

2016 - 5th Scientific Day of School of Science and Technology, University of Camerino, 08/06/2016 Camerino, Italy.

- "Quaternary Ammonium Salts as Highly Efficient Biocides in the Treatment of Microbial Degradation of Artworks".

- "Synthesis of New Climacostol Analogues: a Natural Molecule Become a Lead Compound".

- "CeCl₃ • 7H₂O/NaI as Lewis Acid Catalyst in the Povarov Reaction for the Synthesis of Functionalized Tetrahydroquinolines".

2017 – 26th International Society of Heterocyclic Chemistry Congress (ISHC), 03-08/09/2017, Regensburg, Germany. "Cerium-trichloride promoted Povarov reaction: an easy and stereocontrolled synthesis of tetrahydroquinolines".

2018 – XXXVIII Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana (CDCO 2018), Milano, Scholarship Holder - 09-13/09/2018. Oral Communication "New Sustainable strategies to Obtain Biologically Active Cyclic Structures from Acyclic Precursors".

2018 - 6th Scientific Day of School of Science and Technology, University of Camerino, 28/09/2018, Camerino.

- "CeCl₃• 7H₂O in the Nonbiomimetic Synthesis of Biologically Active Compounds".

- "Sustainable Strategies for the Synthesis of Polyfunctionalized Heterocycles with Potential Biological Activity from Acyclic Precursors".

2019 – XVIII edition CIMPIS Days, Bologna, 18-19/02/2019. Oral Communication "New Sustainable Strategies to Obtain Biologically Active Cyclic Structures from Acyclic Precursors".

2019 – XXXIX Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana (CDCO 2019), Torino, 08-12/09/2019. "Novel Synthetic Analogues of Climacostol as Potent Anticancer Nature-Inspired Small Molecules".

2019 - 12th International School of Organometallic Chemistry (ISOC 2019).

2020 – 1st Virtual Symposium for Young Organic Chemists (ViSYOChem 2020), 03/06/11/2020.
“Synthesis of Nitro Alcohols by Riboflavin Promoted Tandem Nef-Henry Reactions on Nitroalkanes”.

2021 - XIIIth ISOC - International School of Organometallic Chemistry.