

PERSONAL INFORMATION

Dr. Silvia Gazzola



Affiliation: Department of Science and High Technology - University of Insubria - Via Valleggio, 11 - 22100, Como (Italy)

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Date of birth 15/03/1988 | **Nationality** Italian

WORK EXPERIENCE

02/22 - today

Assistant Professor in Organic Chemistry - RTD-B with habilitation in Organic Chemistry

Università dell'Insubria, Department of Science and High Technology, Como, Italy

Main Activities and Responsibilities:

- **Research Interests:** Synthesis of bioactive peptides and peptidomimetics; development of Drug Delivery Systems for the selective delivery of drugs; development of novel methodologies for the regiochemical purine's carbon-functionalization.
- **Current Funded Project:**
 - Member of Uninsubria unit in the European consortium MagicBullet::Reloaded - MSCAITN-20149-ETN N. 861316: "Small Molecule Drug Conjugates for Targeted Delivery in Tumor Therapy" (Principal Investigator: Prof. U. Piarulli)
 - Member of UNMET MEDICAL NEEDS project: "Identification of Novel molecules Supporting the Impact of β -lactams against clinically-relevant Gram-Negative multidrug resistant Organisms (InSigno)" (PI: Dr. Nicasio Mancini)
- **Important grant achievement:**
 - Passed the 1st Phase of FISA 2022 (FONDO ITALIANO PER LE SCIENZE APPLICATE)- FISA-2022-00922: "Lighting up the agrochemical route in weeds: novel Herbicide-Delivery-Devices for Sustainable Agriculture in Italy (STAR)"
- **Teaching activities:**
 - Organic Chemistry Laboratories (72 h, 6 CFU);
 - Organic Chemistry 1 in Environmental Science Faculty (48 h, 6 CFU)
- **PhD course Member:** - teaching course: Drug Discovery and Medicinal Chemistry Course
- **Tutor** of Bachelor (3) and Master Students (4); co-tutor of PhD students (3).
- **Current Institutional Activities:**
 - Member of "Comitato Unico di Garanzia" (CUG) for equal opportunity

11/2023 - 12/2023

Erasmus research fellow

Institute of Biochemistry, Department of Chemistry - **University of Cologne** (DE)

Main Activities and Responsibilities:

Synthesis of venom-derived peptides for cell membrane permeation studies, antiproliferative test on cancer cell lines, confocal studies.

01/18 - 01/22 **Fixed term researcher in Organic Chemistry - RTD-A**
Università dell'Insubria, Department of Science and High Technology, Como, Italy

▪ **Teaching activities:**

- Organic Chemistry Laboratories (72 h, 6 CFU);
- Organic Chemistry 1 in Environmental Science Faculty (48 h, 6 CFU)

▪ **PhD course Member:** - teaching course: Drug Discovery and Medicinal Chemistry Course

▪ **Tutor** of Bachelor (5) and Master Students (8); co-tutor of PhD students (1).

▪ **Institutional Activities:**

- Member of the commission for the writing of the new Academic Ethical Code

01/2017 - 12/2017 **CTI - post-doctoral fellowship**
Supervisor: Dr. Rainer Riedl, Dr. Mike Adams (Bacoba start-up)
ZHAW University, Wädenswil, Kanton Zurich, Switzerland

Main Activities and Responsibilities:

▪ **Research Interests:** Synthesis and optimization of a natural-based peptide as Anti-protozoa drug.

01/2016 - 12/2016 **Marie Skłodowska Curie Post-doctoral fellowship - FP7 - ITN ECHONET**
Supervisor: Dr. Stephen Lindell, Dr. Harald Jakobi
Bayer CropScience AG Weed Control Chemistry Department- Frankfurt Am Main, Germany

Main Activities and Responsibilities:

▪ **Research Interests:** Lead finding and optimization project for agrochemicals compounds based on purine and imidazole scaffolds

EDUCATION AND TRAINING

10/2012-02/2016 **PhD title in Chemical Science**
Thesis title: "Natural products as leads for the synthesis of new anticancer compounds"

PhD secondments:

- 6 months with Professor M. Tosin, University of Warwick, Coventry, United Kingdom;
 - Project: "Novel chain termination probes for the investigation of polyketide biosynthesis *in vivo*"
- 3 months with Professors J. Bosch and M. Amat, Universidad de Barcelona, Barcelona, Spain
 - Project: "Investigation of spiro-oxindoles formation by selective bromination of indole-derivatives"

10/2012-02/2016 **Master Diploma in Chemical Science** - 110/110 cum laude
Università degli Studi dell'Insubria, Como, Italy
Thesis title: "Intramolecular hydroamination of allenes catalyzed by transition metal complexes for the synthesis of vinyl-substituted heterocycles"

10/2012-02/2016 **Bachelor's Diploma in Chemistry and Industrial Chemistry** - 110/110 cum laude
Università degli Studi dell'Insubria, Como, Italy
Stage at Chorus s.r.l. - Gerenzano (VA) - Synthesis of Active Pharmaceutical Ingredients
Thesis title: "Functionalization of Imidazole derivatives as scaffold for pharmaceutical compounds"

PERSONAL SKILLS

Mother tongue(s) Italian

Other languages English (FLUENT), Spanish (FLUENT), German (A1)

SCIENTIFIC SKILLS AND COMPETENCES

- High level of competences in **organic synthesis** of small molecules and natural products, acquired by the conduction of several organic chemistry projects in a multiple of different laboratories spread in different European countries.
- High level of knowledge in **NMR** analysis mono and bi-dimensional.
- High level of competencies in peptide synthesis in solution, manual and automatic solid phase methodologies.
- Analytical and preparative **HPLC, LC-MS** expertise.
- **Conformational analysis of peptides** by CD spectra.
- **Medicinal chemistry** competencies.

SCIENTIFIC ACTIVITIES

ORCID number 0000-0001-6745-3598

H-index 15 (September 2023)

The latest 15 Scientific Publications:

1. **Design, Synthesis and Catalytic Activity of (Cyclopentadienone)iron Complexes Containing a Stereogenic Plane and a Stereogenic Axis**
Fusi, G. M., Gandini, T., Gazzola, S., Grell, t., Colombo, V., Pignataro, L., Piarulli, U. *Chem. Eur. J.*, **2023**, e202302533.
2. **Optimizing the Enzymatic Release of MMAE from isoDGR-based Small Molecule Drug Conjugate by Incorporation of a GPLG-PABC Enzymatically Cleavable Linker**
Zambra, M., Randelović, I., Talarico, F., Borbély, A., Svajda, L., Tóvári, J., Mező, G., Bodero, L. A., Colombo, S., Arrigoni, F., Fasola, E., **Gazzola, S.,*** Piarulli, U.* *Front. Pharmacol.*, **2023**, *14*, 1215694.
3. **Conformational switch and multiple supramolecular structures of a newly identified self-assembling protein-mimetic peptide from Pseudomonas aeruginosa YeaZ protein.**
Fasola, E., Alboreggia, G., Pieraccini, S., Oliva, F., Agharbaoui, F. E., Bollati, M., Bertoni, G., Recchia, S., Marelli, M., Piarulli, U., Pellegrino, S. **Gazzola, S.*** *Front. Chem.*, **2022**, *10*, 1038796.
4. **A combined fragment-based virtual screening and STD-NMR approach for the identification of E-cadherin ligands**
Vasile, F., Lavore, F., Gazzola, S., Vettraino, C., Parisini, E., Piarulli, U., Belvisi, L., Civera, M. - *Front. Chem.*, **2022**, *10*, 946087.
5. **Chiral Iron Complexes in Asymmetric Organic Transformations**
Fusi, G., **Gazzola, S.***, Piarulli, U.* - *Adv. Synth. Catal.*, **2022**, *364*, 696-714.
6. **Multi-Enzymatic Cascade Reactions for the Synthesis of cis,cis-Muconic Acid**
Vignali, E., Pollegioni, L., Di Nardo, G., Valetti, F., Gazzola, S., Gilardi, G., Rosini, E. - *Adv. Synth. Catal.*, **2022**, *364*, 114-1.
7. **2- and 6-Purinylmagnesium Halides in Dichloromethane: Scope and New Insights into the Solvent Influence on the C-Mg Bond**
Fusi G. M., Zelong Lim Z., Lindell S. D., Gomez-Bengoia E., Gordon M. R., **Gazzola S.*** - *Eur. J. Org. Chem.*, **2022**, e202101009.
8. **Antiprotozoal Structure-Activity Relationships of Synthetic Leucinoastatin Derivatives and Elucidation of their Mode of Action**
Brand M, Wang L., Agnello S., Gazzola S., Gall F. M., Raguz L., Kaiser M., Schmidt R. S., Ritschl A., Jelk J., Hemphill A., Maeser P., Buetikofer P., Adams Michael, Riedl R. - *Angew. Chem. Int. Ed.*, **2021**, *60*, 2-11.
9. **Synthesis and Biological Evaluation of an isoDGR-Paclitaxel Conjugate Containing a Cell-Penetrating Peptide to Promote Cellular Uptake**
Bodero L., Parente S., Arrigoni F., Klimpel A., Neundorf I., **Gazzola S.,*** Piarulli U.* - *Eur. J. Org. Chem.*, **2021**, *17*, 2383.
10. **Cyclic RGD and isoDGR Integrin Ligands Containing cis-2-amino-1-cyclopentanecarboxylic (cis-6-ACPC) Scaffolds**
Panzeri S., Arosio D., Gazzola S., Belvisi L., Civera M., Potenza D., Vasile F., Kemker I., Ertl T., Sewald N., Reiser O., Piarulli U. - *Molecules*, **2020**, *25*, 5966.
11. **General Route to Purin-2-ylmagnesium Halides by Metal-Halogen Exchange in Dichloromethane**
Gazzola S., Gordon M. R., Lindell S. D. - *Synlett*, **2020**, *31*, 512.
12. **Approaching Target Selectivity by De Novo Drug Design**
(co-first author) Fischer T., Gazzola S., Riedl R., *Exp. Opin. Drug Dis.*, **2019**, *14*, 791.
13. **Kiss and Run: Promoting Effective and Targeted Cellular Uptake of a Drug Delivery Vehicle Composed of an Integrin-Targeting Diketopiperazine Peptidomimetic and a Cell-Penetrating Peptide**
Feni L., Parente S., Robert C., Gazzola S., Arosio D., Piarulli U., Neundorf I. - *Bioconj. Chem.*, **2019**, *30*, 2011.
14. **Synthesis and Biological Evaluation of RGD and isoDGR-Monomethyl Auristatin Conjugates Targeting Integrin $\alpha V\beta 3$**

Raposo Moreira Dias A.; Bodero L.; Martins A.; Arosio D.; Gazzola S.; Belvisi L.; Pignataro L.; Steinkuhler C.; Dal Corso A.; Gennari C.; Piarulli U. - *ChemMedChem*, **2019**, *14*, 938.

15. **A Structural View on Medicinal Chemistry Strategies against Drug Resistance**

(co-first author) Agnello S., Brand M., Chellat M. F., Gazzola S., Riedl R. - *Angew. Chem. Int. Ed.*, **2019**, *58*, 3300.

Conferences:

- **ORAL COMMUNICATION:** Bologna Peptides Workshop **2023**, Bologna (IT) 18th September. 2023, Gazzola S.- "A journey through the efficacy enhancement of isoDGR-based-Small Molecule-Drug Conjugates for Tumor Targeting"
- **ORAL COMMUNICATION (invited):** International conference "Drug Conjugates for directed Therapy", **2023**, Darmstadt (DE), 23rd-25th August. Gazzola S., Piarulli U. - "Tuning Selectivity and Efficacy in isoDGR-based Small Molecule-Drug Conjugates"
- **POSTER COMMUNICATION:** 36th European and 12th International Peptide Symposium **EPS 2022**, Sitges (ES), 28 August-2 September 2022 - Gazzola S., Fasola E., Pellegrino S., Recchia S., Marelli M., Pieraccini S., Piarulli U. - "Supramolecular self-assembly into nanofibers of a novel bio-inspired amphiphile peptide containing an α -helix domain"
- **ORAL COMMUNICATION:** XXVII Congresso Nazionale della Società Chimica Italiana September 14-23, **2021** - Fusi G., Lim Z., Lindell S., Bengoac E.G., Gordon M. R. Gazzola S. - "2- and 6-Purinylmagnesium Halides in Dichloromethane: Scope and Insights Into the Solvent Influence on the C-Mg Bond"
- **ORAL COMMUNICATION:** ECHC2021 - XXIX European Colloquium on HETEROCYCLIC CHEMISTRY, 26-28 April 2021, online - "2- and 6-purinylmagnesium halides in dichloromethane: scope and insights into the solvent influence of anion stability"
- **ORAL COMMUNICATION:** 14th German Peptide Symposium, **2019**, March 18-21, Koln, Germany - Gazzola S., Bodero L., Piarulli U. - "IsoDGR integrin ligands: a tool for targeted drug delivery"
- **PARTECIPANT:** ITN MSCA integrate conference "Fighting ESKAPE, the bad gang", **2018**, November 21-23, Parma, Italy.
- **PARTECIPANT:** Peptides and conjugates for tumor targeting, therapy and diagnosis, **2018**, June 15-19, Rimini, Italy.
- **PARTECIPANT:** UGM & Conference 2017 Europe, **2017**, May 16-19, Copenaghen, Denmark
- **ORGANIZER and ORAL COMMUNICATION:** SAHOC **2016**, September 1-2, Sheffield, UK - Gazzola S., Gordon M., Lindell S., Jakobi H. - "Novel Mg-based Approach for the Regioselective Functionalization of Purine Derivatives"
- **PARTECIPANT:** IX School on Organometallic Chemistry "Marcial Moreno Mañas", **2016**, July 6-8, San Sebastian, Spain.
- **POSTER COMMUNICATION:** Medicinal Chemistry Residential School, **2015**, June 21-26, Loughborough, UK - Gazzola S., Broggin G., Calogero F., Christodoulou M. S., Passarella D. - "Gram scale racemic preparation and enantioselective synthesis of Boehrmeriasin A: a new topoisomerase and SIRT2 inhibitor"
- **PARTECIPANT:** XXII edition of young researcher of SCT, Paris, **2015**
- **POSTER COMMUNICATION:** RSC Chemical Biology and Bio-Organic Chemistry Postgraduate Symposium, University of Warwick, **2014** - Gazzola S., Parascandolo J. P., Riva E., Wilkening I., Tosin M. - "Novel chain termination probes for the investigation of polyketide biosynthesis in vivo"
- **POSTER COMMUNICATION:** 9th International School of Organometallic Chemistry, Camerino, **2013**, September - Gazzola S., Broggin G., Brusa F., Pangher E. - "Copper-mediated intramolecular alkoxychlorination of alkynes as a route to chloroalkylidene-substituted heterocycles"
- **ORAL COMMUNICATION:** XV National Conference on pericyclic reactions and hetero/carbocycles synthesis, Perugia, **2013** - Gazzola S., Broggin G., Brusa F., Mazza A. "Intramolecular hydroamination of allenes catalyzed by transition metal complexes for the synthesis of vinyl-substituted eterocycles"
- **ORAL COMMUNICATION:** 14th German Peptide Symposium, 2019, March 18-21, Koln, Germany - Gazzola S., Bodero L., Piarulli U. - "IsoDGR integrin ligands: a tool for targeted drug delivery"
- **ORAL COMMUNICATION:** XXVII edition of new orientation in organic synthesis studies, Milano, 2012 - Gazzola S., Broggin G., Fasana A. - "Intramolecular hydroamination of allenes catalyzed by transition metal complexes for the synthesis of vinyl-substituted heterocycles"

Workshops:

- ThermoFisher - Orbitrap - Course - May 2022
- Orbitrap Technology: a step forward in untargeted analysis - 20th November 2020, online
- "Ateneo tra libertà e responsabilità": incontro per Codice Etico e Integrità nella ricerca - 2020, January, 15th, Università degli Studi di Milano.
- Corso di Alta Formazione "Contrastare con successo il mobbing e le molestie sessuali e psicologiche sul luogo di lavoro" - 32 h - Università dell'Insubria - a.a. 2019/2020.
- MOE Workshop - Chemical Computing group- UGM Conference 2017 Europe, 2017, May 16-19th, Copenaghen, Denmark.
- IX School on Organometallic Chemistry "Marcial Moreno Mañas", 2016, July, 6-8th San Sebastian, Spain.
- Medicinal Chemistry Residential School, 2015, June, 21-26th, Loughborough, UK.
- 9th International School of Organometallic Chemistry, September 2013, Camerino, Italia.

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

Como (CO), 15/09/2023

Silvia Gazzola