

Scientific CV of Lorenzo Pacini

Personal data

Name and surname: Lorenzo Pacini

Date and place of birth: 13 July 1989, Pistoia (PT), Italy

Nationality: Italy

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Vocational training

- 2008: secondary school diploma at scientific High school in Pistoia (PT)
- 2009-2015: Pharmaceutical Chemistry and Technology at University of Florence (FI)
- 2016: Master degree with the thesis "Peptide as drug: three possible uses in anticancer and antiviral therapies" Supervisor: Prof. Paolo Rovero.
- 2017: Post-graduate Fellowship (funded by FONDAZIONE RRCA ONLUS - ISTITUTO PROSPERIUS FIRENZE) at the Interdepartmental laboratory PeptLab (University of Florence) - Design and synthesis of Human Relaxin-1, a peptide hormone involved in several biological activities, and its analogs.
- 2018-2019: Peptide Chemist at Fabbrica Italiana Sintetici (F.I.S. spa) - GMP Syntheses of Peptide APIs and intermediate
- 2020-2021: Research assistant at Interdepartmental laboratory Peptlab (University of Florence) - Synthesis and the characterization of SARS COV-2 Spike protein epitopes and the Optimization of SPPS of long and difficult peptides.
- 2021: Chemical Technologist - Research and development of a greener substitute of trichloroethylene with improved efficiency and sustainability, aimed to degreasing metal products. Project funded by Tuscany region, POR FESR Call.
- 2022-ongoing: industrial PhD student in Chemical sciences at University of Florence with the project "Greening peptide chemistry: a necessary step to the future" in collaboration with Gyros Protein Technologies. Tutor: Prof. Anna Maria Papini.
- 2023: 6 months period abroad in Berlin, Germany at PECS Lab (Gyros Protein Technologies R&D Lab) to develop green solutions for Solid Phase Peptide Synthesis under the supervision of Dr. Robert Zitterbart.
- 2024: 1 month period abroad in Berlin, Germany at PECS Lab (Gyros Protein Technologies R&D Lab) to develop green synthesis of GLP-1 Agonist.

Conferences

12/1/20 - 3rd meeting of the Italian peptide society (ItPS) [Speech: An optimized scalable fully automated solid-phase microwave-assisted cGMP-ready process for the preparation of Eptifibatide]

19/1/2022 – 21/1/2022 - PiCSU 2022 - PhD in Chemical Sciences at Unifi, Sesto Fiorentino, Italy.
[Speech: Greening peptide chemistry, a necessary step to the future]

15/6/2022 - ITPS 2022 - 4th Italian Peptide Society Congress
[Speech: An Optimized Safe Process from Bench to Pilot cGMP Production of API Eptifibatide Using a Large-Scale Microwave-Assisted Solid-Phase Peptide Synthesizer]

28/8/2022 – 2/9/2022 - EPS 2022 - 36th European and 12th International Peptide Symposium, Sitges, Spain. [as EPS Young Testimonial]
[Poster: Optimization of critical parameters to obtain difficult peptide sequences using induction-heat energy on solid phase peptide synthesizer PurePep® Chorus]

25/1/2023 – 27/1/2023 - PiCSU 2023 - PhD in Chemical Sciences at Unifi, Sesto Fiorentino, Italy.
[Speech: Optimization of critical parameters to obtain difficult peptide sequences using induction-heat energy on solid phase peptide synthesizer PurePep® Chorus]

23/10/2023 - ITPS 2023 - Italian Peptide Society Congress
[Speech: Investigation of green synthesis solvents on the PurePep® Chorus taking advantage of induction heating.]

23/1/2024 – 26/1/2024 - PiCSU 2024 - PhD in Chemical Sciences at Unifi, Sesto Fiorentino, Italy.
[Speech: Green solvents on the PurePep® Chorus® taking advantage of induction heating: synthesis and HPLC-free purification of a 72mer deriving from COVID-19 Spike protein and β -amyloid(1-42)]

8/2/2024 – 17/2/2024 – Gordon Research Conference and Seminar, Ventura (CA), USA.
[Speech and poster presentation: Green Binary Solvent Systems with Induction Heating on an Automated Peptide Synthesizer: Synthesis and HPLC-free Purification of Difficult Sequences]

Publications

On-resin microwave-assisted copper-catalyzed azide-alkyne cycloaddition of H1-relaxin B single chain 'stapled' analogues

D'Ercole, A., Sabatino, G., Pacini, et al. (2020) *Peptide Science*, 11 2(4), e24159.

An Optimized Scalable Fully Automated Solid-Phase Microwave-Assisted cGMP-Ready Process for the Preparation of Eptifibatide

Sabatino, G., D'Ercole, A., Pacini, et al. (2020) *Organic Process Research & Development*, 25(3), 552-563. \dot{U}

An Optimized Safe Process from Bench to Pilot cGMP Production of API Eptifibatide Using a Multigram-Scale Microwave-Assisted Solid-Phase Peptide Synthesizer

D'Ercole, A., Pacini, L., et al. (2021) *Organic Process Research & Development*, 25(12), 2754-2771.

Seroreactivity of the Severe Acute Respiratory Syndrome Coronavirus 2 Recombinant S Protein, Receptor-Binding Domain, and Its Receptor-Binding Motif in COVID-19 Patients and Their Cross-Reactivity with Pre-COVID-19 Samples From Malaria-Endemic Areas

Traoré, A., Guindo, M. A., Konaté, D., ... & Balam, S. (2022). *Frontiers in Immunology*, 13.

Peptide-Functionalized Silk Fibers as a Platform to Stabilize Gelatin for Use in Ingestible Devices

Valentini, L., Pacini, L., Errante, F., & Morabito, A. (2022). *Molecules*, 27(14), 4605.

Bicyclopeptides: a new class of ligands for Cu (ii) ions.

Marciniak, A., Pacini, L., Papini, A. M., & Brasuń, J. (2022). *Dalton Transactions*.

Synthetic short-chain peptide analogues of H1 relaxin lack affinity for the RXFP1 receptor and relaxin-like bioactivity. Clues to a better understanding of relaxin agonist design

D'Ercole, A., Nistri, S., Pacini, L., ... & Rovero, P. (2022). *Frontiers in Pharmacology*, 2957.

A SARS–CoV-2 Spike Receptor Binding Motif Peptide Induces Anti-Spike Antibodies in Mice and Is Recognized by COVID-19 Patients.

Pratesi, F., Errante, F., Pacini, L., ... & Herrera, S. (2022). *Frontiers in Immunology*, 2427.

Porcine Relaxin but Not Serelaxin Shows Residual Bioactivity after In Vitro Simulated Intestinal Digestion—Clues for the Development of New Relaxin Peptide Agonists Suitable for Oral Delivery.

Pacini, L., D'Ercole, A., Papini, A. M., Bani, D., Nistri, S., & Rovero, P. (2022). *International Journal of Molecular Sciences*, 24(1), 48.

Biomaterial inks from peptide-functionalized silk fibers for 3D printing of futuristic wound-healing and sensing materials.

Ceccarini, M. R., Palazzi, V., Salvati, R., ... & Valentini, L. (2023). *International Journal of Molecular Sciences*, 24(2), 947.

SARS-CoV-2 inhibitory activity of a short peptide derived from internal fusion peptide of S2 subunit of spike glycoprotein.

Stincarelli, M. A., Quagliata, M., Di Santo, A., Pacini, L., Fernandez, F. R., Arvia, R., ... & Giannecchini, S. (2023). *Virus Research*, 334, 199170.

Optimization of Peptide Synthesis Time and Sustainability Using novel Eco-Friendly Binary Solvent Systems with Induction Heating on an Automated Peptide Synthesizer.

Pacini, L., Muthyala, M., Aguilar, L.; Zitterbart, R.; Rovero, P., Papini, AM. (2024). *Peptide Science*, .

The Role of the Unbinding Cycle on the Coordination Abilities of the Bi-Cyclopeptides toward Cu (II) Ions.

Lisowska, A., Świątek, P., Dębicki F., Lewińska, A., Marciniak, A., Pacini, L., Papini, AM., Brasuń, J. *Molecules* 29.10 (2024): 2197.

A Promising Compound for Green Multiresponsive Materials Based on Acyl Carrier Protein.

Acar, M., Tatini, D., Fidi, A., Pacini, L., Quagliata, M., Nuti, F., Papini, AM., Lo Nostro, P. *Langmuir* (2024).