Federico Corsini

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Website: https://orcid.org/my-orcid?orcid=0009-0003-5328-1379

Gender: Male **Date of birth:** 14/01/1999 **Place of birth:** Modena, Italy **Nationality:** Italian

EDUCATION AND TRAINING

[Current] **PhD student in Health Innovative Products and Technologies (HIP-TECH)**

University of Modena and Reggio Emilia, Department of Science Life

City: Modena | **Country:** Italy | **Field(s) of study:** Organic chemistry ; Catalysis

Supervised by: Professor Emilia Caselli

Co-supervised by: Professor Francesco Fini

[09/2018 – 19/12/2023] **MSc in Chemistry and Pharmaceutical Technology**

University of Modena and Reggio Emilia

City: Modena | **Country:** Italy | **Field(s) of study:** Chemistry ; Organic chemistry ; Medicinal chemistry ; Catalysis | **Final grade:** 110/110 cum laude | **Thesis:** Organic synthesis

Thesis title: Design, synthesis, and characterization of key molecules for the enzyme-templated synthesis of metallo-beta-lactamase inhibitors.

Thesis Project: This project concentrated on the design, synthesis, and characterisation of five small molecules, which were envisaged as potential warheads for the protein-templated synthesis of novel metallo-β-lactamase inhibitors.

Supervised by: Prof. Fabio Prati and Prof. Francesco Fini

WORK EXPERIENCE

University of Modena and Reggio Emilia, Department of Science Life

City: Modena | **Country:** Italy

[16/01/2025 – 31/10/2025] **Pre-Doctoral Research Fellowship**

Activities: Design and development of a multi-step synthetic pathway and structural optimisation of boronic acid-based inhibitors targeting *Acinetobacter baumannii*. The goal is to assess whether introducing key structural modifications could enhance bacterial uptake or not.

Supervised by: Professor Fabio Prati

University of Modena and Reggio Emilia, Department of Science Life

City: Modena | **Country:** Italy

[20/02/2024 – 20/06/2024] **Pre-Doctoral Research Fellowship**

Activities: Scale-up development of a boronic acid-based β-lactamase inhibitor clinical candidate (MB076). The aim was to obtain a scalable multi-gram synthesis of the compound for further *in vivo* testing. The process involved nine synthetic steps with an overall yield of 56%.

Supervised by: Professor Fabio Prati

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Organic chemistry

Technical Skills

- Design and synthesis of small-molecule compounds.
- Development and optimisation of single-step and multi-step chemical reactions for the synthesis of small-molecule compounds.
- Handling organolithium compounds (*n*–BuLi, LiHMDS)
- Performing reactions under inert atmosphere
- Organic molecule purification techniques (flash column chromatography, recrystallisation, fractional distillation, trituration).
- Characterisation of organic molecules using ^{1}H-NMR, ^{11}B, ^{13}C-NMR, HSQC, HMBC, COSY, NOESY, GC-MS, LC-MS, HPLC.

PUBLICATIONS

[2025] **Discovery of Boronic Acids-Based β-Lactamase Inhibitors Through In Situ Click Chemistry**