



Alessio Romerio

Date of birth: 18/10/1994 | **Nationality:** Italian | **Email address:** alessio.romerio@unimib.it |

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WORK EXPERIENCE

UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA – MILANO, ITALY

POST-DOCTORAL RESEARCHER – 12/2022 – CURRENT

My tasks comprise the design and synthesis of new small-molecule drugs, using my knowledge in **organic chemistry, laboratory skill** and several instruments and techniques such as **NMR, MS, IR, Biotage** and more, resulting in patents and publications: through this work, I developed good **problem solving** skills.

I have the responsibility of **administrating** the laboratory both on the chemical and the beaurocratic stance, which requires great **organizational skills**.

Finally, I am responsible for tutoring younger students (i.e., undergraduate and graduate students), teaching them how to work in a chemistry laboratory and how to obtain their research goals: this also increased my **team work** and **leadership** ability.

ST. LOUIS UNIVERSITY – ST. LOUIS, UNITED STATES

Business or Sector Professional, scientific and technical activities | **Website** <https://www.slu.edu/>

VISITING PHD STUDENT – 01/2022 – 07/2022

During my PhD, I had the possibility to work at the SLU as visiting student. This allowed me expand my knowledge in **organic chemistry** and relative **techniques**, as well as to form **network** and increase my **english** proficiency.

UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA – MILANO, ITALY

Business or Sector Professional, scientific and technical activities

PHD STUDENT – 11/2019 – 10/2022

During my PhD I worked as a **medicinal chemist** in the lab of prof. Peri, a leading expert on inflammation. There, I learnt how to properly do **research**, starting from literature to the **development** of a finished product. I also had to manage the laboratory and teach to younger students, increasing my **organizational** and **leadership** skills. I also learnt how to cope with setbacks and improve my work accordingly.

SOCIAL AND POLITICAL ACTIVITIES

01/01/2025 – 31/12/2027

Representative of Chemical Biology Division Young Group

In 2025 I was elected in the directory board of the Young Group of the Italian Chemical Society to represent the Chemical Biology Division. From this position, I will foster participation and growth of young scientists, as well as organizing national and international events and congresses.

Link https://www.soc.chim.it/sci_giovani/direttivo/romerio

EDUCATION AND TRAINING

11/2019 – CURRENT Milano

PHD IN CHEMICAL, GEOLOGICAL AND ENVIRONMENTAL SCIENCES Università degli Studi di Milano-Bicocca

Address Piazza della Scienza, 2, 20126, Milano | **Website** <https://www.unimib.it/> | **Field of study** Chemistry, Biochemistry |

Level in EQF EQF level 8

2017 – 2019 Milano

MASTER'S DEGREE IN CHEMICAL SCIENCES AND TECHNOLOGIES Università degli Studi di Milano-Bicocca

My master's degree didn't only focused on chemistry, but also on biochemistry: I spent a semester as an **Erasmus+** student at Université de Strasbourg (<https://www.unistra.fr>), where I followed courses in chemistry and biology (chimie et biologie). During this time, I also grew my proficiency in **french**.

Address Piazza della Scienza, 2, 20126, Milano | **Website** <https://www.unimib.it/> | **Field of study** Chemistry , Biochemistry |

Final grade 110 cum laude | **Level in EQF** EQF level 7 |

Thesis Synthesis Optimization and Biological Characterization of New Toll-Like Receptor 4 (TLR4) Antagonists

2014 – 2017 Milano, Italy

BACHELOR'S DEGREE IN CHEMICAL SCIENCES AND TECHNOLOGIES Università degli Studi di Milano-Bicocca

Address Piazza della Scienza, 2, 20126, Milano, Italy | **Website** <https://www.unimib.it/> | **Field of study** Chemistry |

Level in EQF EQF level 6

● LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
FRENCH	C1	C1	C1	C1	C1

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

● SKILLS

Microsoft Word | Microsoft Powerpoint | Microsoft Excel | Google Drive | Outlook | MS Teams, zoom, skype, webex

● CONFERENCES AND SEMINARS

18/06/2025 – 20/06/2025 Trieste, IT

Convegno Nazionale della Divisione di Chimica dei Sistemi Biologici 2025

26/08/2024 – 30/08/2024 Milano, IT

SCI2024 XXVIII Congresso Nazionale della Società Chimica Italiana

08/04/2024 – 11/04/2024 Utrecht, NL

EFMC | ACSMEDI Medicinal Chemistry Frontiers- Joint Symposium on Medicinal Chemistry

27/09/2023 – 29/09/2023 Milano

Convegno Nazionale della Divisione di Chimica dei Sistemi Biologici

09/02/2023 – 11/02/2023 Pisa, IT

CINMPIS Days 2023

15/12/2022 – 15/12/2022 Milano, IT

BtBSDay 2022

26/06/2022 – 29/06/2022 New York City, USA

37th National Medicinal Chemistry Symposium NMCS 2022

15/12/2021 – 15/12/2021 Milano, IT

BtBsDay 2021

14/09/2021 – 23/09/2021 Roma, IT

XXVII Congresso Nazionale della Società Chimica Italiana

26/05/2021 – 26/05/2021

European Chemical Biology Symposium 2021

05/04/2021 – 16/04/2021

ACS Spring 2021

15/12/2020 – 15/12/2020 Milano, IT

BtBSDay 2020

20/02/2020 – 21/02/2020 Pavia, IT

XIX CINMPIS Days

● **PUBLICATIONS**

2025

[Preclinical development of the TLR4 antagonist FP12 as a drug lead targeting the HMGB1/MD-2/TLR4 axis in lethal influenza infection](#)

Shirey KA, Romerio A, Shaik MM, et al. Innate Immun. 2025.

2025

[Towards more efficient synthetic immunomodulators: biological characterization and mechanism of action of monosaccharide-derived TLR4 agonists](#)

Franco AR, Aladailleh Z, Romerio A, et al. RSC Med Chem. 2025;16(5):2261-2269.

2025

[Monosaccharide-Based Synthetic TLR4 Agonist Enhances Vaccine Efficacy against Pseudomonas aeruginosa Challenge](#)

Sainz-Mejías M, Ma C, Hou Y, et al. ACS Infect Dis. 2025;11:894–904.

2024

[Vibrational spectroscopy coupled with machine learning sheds light on the cellular effects induced by rationally designed TLR4 agonists.](#)

Ami D, Franco AR, Artusa V, et al. Talanta. 2024;275(April):126104.

2024

[Development of a New Vaccine Adjuvant System Based on the Combination of the Synthetic TLR4 Agonist FP20 and a Synthetic QS-21 Variant](#)

Shaik MM, Pasco S, Romerio A, et al. J Med Chem. 2024;67(24):22254–22262.

2023

[New Glucosamine-Based TLR4 Agonists: Design, Synthesis, Mechanism of Action, and In Vivo Activity as Vaccine Adjuvants](#)

Romerio, A.; et al.; J. Med. Chem. 2023, 66, 4, 3010–3029

2023

[Overcoming Challenges in Chemical Glycosylation to Achieve Innovative Vaccine Adjuvants Possessing Enhanced TLR4 Activity.](#)

Romerio, A; et al.; ACS Omega 2023, 8, 39, 36412–36417

2023

[Cleaner synthesis of preclinically validated vaccine adjuvants](#)

Romerio, A; Peri, F; Front. Chem. Sec. Green and Sustainable Chemistry Volume 11 - 2023

2023

[Novel TLR4-Activating Vaccine Adjuvant Enhances the Production of Enterococcus faecium-binding Antibodies](#)

Franco AR, Sadones O, Romerio A, et al. J Med Chem. 2023;67(7):5603-5616.

2022

[Highly Selective SERCA2a Activators: Preclinical Development of a Congeneric Group of First-in-Class Drug Leads against Heart Failure](#)

Luraghi, A.; et al., J. Med. Chem. 2022, 65 (10), 7324–7333.

2021

[Synthetic Glycolipids as Molecular Vaccine Adjuvants: Mechanism of Action in Human Cells and In Vivo Activity.](#)

Facchini, F. A.; et al., J. Med. Chem. 2021, 64, 16, 12261–12272

2021

[New synthetic agonists of TLR4 receptor](#)

PERI F; ROMERIO A; D'AMATO S; 2023 NEW SYNTHETIC AGONISTS OF TLR4 RECEPTOR WO/2023/002354

2020

[Increasing the Chemical Variety of Modulators: An Overview](#)

Romerio, A.; Peri, F. Front. Immunol. 2020, 11 (July), 1–16.