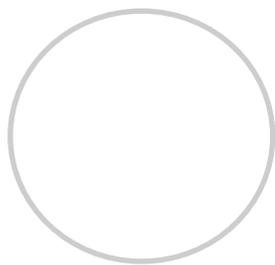# Cristiano Biancucci

EDUCATION AND TRAINING

[01/10/2024 – Current]

Postdoctoral resercher

Sapienza Università di Roma   www.uniroma1.it

City: | **Country:** | **Field(s) of study:** Organic Chemistry

- Isolation and characterization of Natural Compounds
- Total synthesis of complex Natural Compounds
- Stereoselective synthesis: Enantioselective and Diastereoselective synthesis
- Application of Organometallic in Organic Synthesis

[01/11/2020 – 27/02/2024]

Ph.D. (Doctor Europaeus qualification) in Molecular and Biomolecular Science

Università degli Studi di Palermo   www.unipa.it

City: Palermo | **Country:** Italy | **Field(s) of study:** Medicinal Chemistry | **Thesis:** Design and synthesis of new 3-amino-1,2,4-triazine derivatives as PDK1 inhibitors

Tutor: Prof. Patrizia Diana

[04/2023 – 08/2023]

Visiting PhD student

Université Paris Cité   https://u-paris.fr/en/

City: Parigi | **Country:** France | **Field(s) of study:** Computational Chemistry

In-depth study of the Drug Discovery aspect, so Molecular Docking, Virtual Screening, Molecular Dynamics, MMPBSA, MMGBSA.

[01/01/2020 – 31/10/2020]

Pre-doctoral fellowship

Università degli Studi di Palermo   www.unipa.it

City: Palermo | **Country:** Italy | **Field(s) of study:** Medicinal Chemistry

Winner of research scholarship in Medicinal Chemistry: BS-RIC 127-2019 - "Design and synthesis of new kinases inhibitors"

Tutor: Prof. Patrizia Diana

[2013 – 2019]

Master's degree in Pharmacy

Università degli Studi di Palermo   www.unipa.it

City: Palermo | **Country:** Italy | **Field(s) of study:** Farmacia e Farmacia Industriale (LM13) | **Final grade:** 110/110 cum laude | **Thesis:** Synthesis and antitumor activity evaluation of new policyclic compounds

Experimental thesis in Medicinal Chemistry

Tutor: Maggio Benedetta

General subject: Chemistry, Pharmaceutical technology, Pharmacology, Toxicology.

Professional subject: Medicinal Chemistry, Organic Chemistry, Analysis of medicines.

High school Diploma

I.I.S. Boscardin

City: Vicenza | **Country:** Italy | **Field(s) of study:** Biology and Chemistry

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 **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

ORGANIZATIONAL SKILLS

Description:

Good organizational skills honed during the laboratory experiences both in high school and University. Furthermore, the experience acquired during my experimental thesis path in **Medicinal Chemistry** provided me with outstanding **management and planning skills** in the **Organic Chemistry** field. These skills were further improved during my **research scholarship period** at Università degli studi di Palermo. In the course of my **Ph.D.** period my abilities have grown considerably, this allowed me to exponentially improve my skills about **Chemistry of synthesis** and obtained good skills about the **Drug Discovery** aspect of **Computational Chemistry**. Additionally, my current **postdoctoral research** in **Organic Chemistry** at **Sapienza Università di Roma** is providing me with a solid background in **Organic Synthesis**, which I can apply to **plan and carry out new synthetic pathways and reactions**. Moreover, these diverse **multidisciplinary experiences** enable me to collaborate effectively with **various professionals** in the **field of Drug Discovery**.

Strong **propensity for results** and significant ability about **time management**. Outstanding capacity to work under pressure, coupled with remarkable attitude to solve difficulties (**problem solving**). Worth mentioning are also **analytic thinking** and **critical thinking** developed during my years of working in **pharmaceutical research**.

TECHNICAL SKILLS

Description:

During my years of work in the Medicinal Chemistry, Computational Chemistry and Organic Chemistry laboratories I have acquired and improved skills about:

-**rational design** of a **scaffold** (**Drug Design**) which can have a potential **biological activity** towards a **biological target**

-the **potential modifications** of the scaffold in order to **improve its interaction with the target** (study of Structure Activity Relationship **SAR**)

-the **planning** and the **development** of an **effective synthetic pathway** which allows the synthesis of a **library of compounds**

-the ability to manipulate chemical compounds and to **assemble** and **monitorchemical reactions** with **different reagents and conditions**: **dry** reactions, **heated** and **cooled condition**, in **inert atmosphere** such as under **Nitrogen** or **Argon** atmosphere and with or without **Schlenk system**

-**purification** techniques of chemical compounds such as **recrystallization**, **chromatography**, **automated chromatography** (**Biotage**).

-**characterization** techniques of chemical compounds such as **NMR**, **IR**, **UV, MS**

-**theoretical evaluation** of **protein-ligand interaction** through **Molecular Docking** and **Molecular Dynamics analysis**

-evaluation of **complex synthetic strategies** for **the total synthesis of natural compounds**

-**designing** and **performing enantioselective** and **diastereoselective syntheses**

-applying **organometallics** in **organic synthesis.**

Proven abilities to use the following techniques and tools:

Liquid Chromatography (**LC**).

Thin Layer Chromatography (**TLC**).

MS spectroscopy.

IR spectroscopy.

NMR spectroscopy**:**

-**^{1}H-NMR** and **^{13}C-NMR**

-**^{19}F-NMR** and **^{31}P-NMR**

-**DEPT**

-**APT**

-**HMBC**

-**HSQC**

-**NOESY**

-**TOCSY**

-**COSY**

Proven skills to use software for **Drug Discovery** and **theoretical evaluation of biological system behaviour** such as:

-**Autodock Vina**

-**Raccoon** for Virtual Screening

-**Amber** for Molecular Dynamics, MMPBSA e MMGBSA

-**VMD**

-**Pymol**

-**Obabel**

-**Chimera**

-**Avogadro**

-**ChemDraw** and **ChemSketch**

Excellent skills in using **SciFinder** and **Reaxys** databases.

HPLC: Practical experience with both analytical and semi-preparative HPLC, using normal-phase and reverse-phase modes.

OTHER IT SKILLS

Description:

Good IT skills including use of software such as PowerPoint, Word and Excel.

PUBBLICATIONS

Description:

- D. Carbone; C. Biancucci; M. De Franco; C. Pecoraro; S. Cascioferro; G. Cirrincione; B. Parrino; V. Gandin; and P. Diana; *"Simplified 1,2,4-triazine compounds: unlocking enhanced antitumor efficacy via pdk inhibition"*; XXVIII National Meeting on Medicinal Chemistry (NMMC28) **2023** (poster).
- M. Fiabane; C. Platella; F. Diaco; C. Biancucci; A. Calcaterra; D. Musumeci; G. Antonelli; O. Turriziani; B. Botta; D. Montesarchio; M. Mori; *"Structure-based ligandability exploration of a G-quadruplex-forming sequence from Pseudomonas aeruginosa genome"*; ACS Med. Chem. Lett. **2025**. https://doi.org/10.1021/acsmedchemlett.5c00428

CONFERENCES AND SEMINARS

List:

- 13th Young Medicinal Chemistry Virtual Symposium, Nuove Prospettive in Chimica Farmaceutica **2021**.
- ESMEC, European School of Medicinal Chemistry **2021**.
- Congresso SUPRAMED **2022**.
- MMYMC: MM Young Modellers Conference **2023** (Tolosa, Francia).
- Oral comunication at the ISSNP, International Summer School of Natural Products **2025** (Torre del Greco), **Scholarship awarded by the Italian Chemical Society (SCI).**
- Oral comunication at the CDCO **2025** (Villasimius, CA).

COMMUNICATION AND INTERPERSONAL SKILLS

Description:

Good communication and relational skills. Great management skills acquired during the internship, during both my, research scholarship and Ph.D. periods, as well as during my period abroad, in Paris. The experiences acquired are extremely important for teamwork, in the shape of building a constructive dialogue with other people and a positive confrontation with colleagues (**teamwork**).