



Perla Makhoul

PhD in Health Sciences and Oncology



Madrid, Spain



12 February 1998



Lebanese (EU work permit)



[perlamakhoul](#)



+34 663 288 307



perlamkl@hotmail.com

SHORT BIOGRAPHY

My research offered cytotoxicity analysis, metabolism studies, mechanistic insights, and in vivo studies of patented imiquinalines derivatives against acute myeloid leukemia and cutaneous melanoma. My international joint PhD was designed to bridge the gap between in vitro findings and in vivo systems by integrating simple alternative models, such as *Caenorhabditis elegans* (*C. elegans*), with more complex animal models, including cell line-derived and patient-derived xenograft mouse models. My postdoctoral research focused on comprehensive transcriptomic characterization and validation of the molecular targets of novel imiquinalines. Through RNA sequencing and bioinformatics analyses coupled with on-bench confirmation, we identified and validated treatment-induced immune stimulation, mitochondrial alterations, and nucleolar/ribosomal perturbations.

EDUCATIONAL BACKGROUND

2021-2024 PhD: Health Sciences

University of Montpellier, France (cotutelle).

Molecular investigation of the cytotoxic and immunomodulatory anticancer effect of a member of the imiquinalines family against solid and liquid tumors.

2021-2024 PhD: Oncology

Lebanese University, Lebanon (cotutelle).

Molecular investigation of the cytotoxic and immunomodulatory anticancer effect of a member of the imiquinalines family against solid and liquid tumors.

2019-2021 MSc: Immunology & Microbiology

American University of Beirut (AUB), Lebanon.

Targeted therapy for Acute Myeloid Leukemia: Retinoic Acid, Actinomycin D, and Everolimus.

2016-2019 BSc: Life and Earth Sciences

Holy Spirit University of Kaslik (USEK), Lebanon.

PATENTS

Bigot, K., **Makhoul, P.**, El Hajj, H., P., Patinote, C., Larbouret, C., Deleuze-Masquefa, C., & Bonnet, PA. "NEW COMPOUNDS AND USE THEREOF", Reference BIO23267-T1 filed 27 March 2025 Inserm Transfert.

PUBLICATIONS

Makhoul, P. et al. (2026) The bioactivation of EAPB02303 by catechol-O-methyltransferase is essential for its anticancer efficacy against acute myeloid leukemia. *Under review*.

Makhoul, P. et al. (2026) Transcriptomic and molecular insights of the imiquinaline metabolite EAPB04303 in AML. *In preparation*.

Makhoul, P. et al. (2025) The Novel Imiquinaline EAPB02303 Is a Potent Drug for Treating Acute Myeloid Leukemia. *Biomolecules*, 15(5), 741.

PROFESSIONAL EXPERIENCE

2025-2026 Postdoctoral Researcher

Faculty of Medicine, American University of Beirut (AUB), Lebanon.

- Led independent and collaborative projects in cancer biology, molecular oncology, and translational medicine.
- Designed and conducted in vitro and in vivo experiments on molecular mechanisms underlying cancer progression and therapeutic responses.
- Supervised and trained master's students and junior researchers in laboratory techniques, experiments, thesis writing and thesis presentation.

2023-2024 Research Assistant

Faculty of Medicine, American University of Beirut (AUB), Lebanon.

- Designed and executed research projects on targeted therapies for leukemia.
- Provided academic support and mentoring to master's and PhD students.

2024 Teaching Assistant

Faculty of Pharmacy, University of Montpellier, France.

- Assisted in delivering graduate courses in biological and health sciences.
- Conducted practical laboratory sessions and tutorials, teaching experimental techniques and scientific concepts.

2021 Medical Laboratory Intern

Hammoud Hospital University Medical Center, Lebanon.

Makhoul, P. et al. (2024) Uncovering the Molecular Pathways Implicated in the Anti-Cancer Activity of the Imidazoquinoxaline Derivative EAPB02303 Using a *Caenorhabditis elegans* Model. *International Journal of Molecular Sciences*, 25(14), 7785.

Awada, B., Hamie, M., El Hajj, R., Derbaj, G., Najm, R., **Makhoul, P., et al. (2022)** HAS 1: A natural product from soil-isolated *Streptomyces* species with potent activity against cutaneous leishmaniasis caused by *Leishmania tropica*. *Frontiers in pharmacology*, 13, 1023114.

CONFERENCES

2025 Transcriptomic dissection of second-generation imiquinalines: molecular mechanisms and therapeutic potential against acute myeloid leukemia. (Oral Presentation)

5th International Bioinformatics Workshop: leveraging artificial intelligence and big data for precision medicine, Beirut, Lebanon.

2024 Uncovering the molecular pathways dictating the anti-leukemic potency of EAPB02303 of the imiquinalines family. (Poster)

Doctoral Forum, Lebanese University, Hadath, Lebanon.

2024 Investigation of the molecular targets dictating the anti-leukemic potency of EAPB02303, a member of the imiquinalines family. (Oral Presentation)

Institute of Biomolecules Max Mousseron, Montpellier, France.

2024 *Caenorhabditis elegans*: a model organism to unravel the molecular targets dictating the anti-leukemic potency of EAPB02303. (Poster)

Ver Midi XXV conference, Lyon, France.

2023 Unraveling the link between lifespan and the mechanism of action of a member of the Imiquinalines family in *C. elegans*. (Poster)

24th International *C. elegans* Conference, Glasgow, Scotland.

CERTIFICATES & QUALIFICATIONS

2026 Qualifications Maître de Conférences (MCF), Conseil National des Universités (CNU), section 87 Sciences biologiques, fondamentales et cliniques.

French national qualification for a tenured professor-researcher level position.

2023 FELASA accredited Course 063/18 for designing procedures and projects on rodents for research purpose (EU functions A, B, C, D)

BioCampus - Réseau des Animaleries de Montpellier, France.

2020 Animal Care Facility Training Certificate

Animal Care Facility ACF - American University of Beirut (AUB), Lebanon.

FELLOWSHIPS & HONORS

2021-2024 University of Montpellier and the National Council for Scientific Research, CNRS-Lebanon Doctoral Fellowship

2019-2021 Graduate Fellowship & Assistantship Program

American University of Beirut (AUB), Lebanon.

2016-2019 Honor Student

Holy Spirit University of Kaslik (USEK), Lebanon.

SCIENTIFIC OUTREACH

2025 "The hidden world of cancer cells" Science Booth

AUB STEM Week, AUB, Lebanon.

2022-2024 "Aventure Biomolécules" Workshop

Institute of Biomolecules Max Mousseron IBMM, Montpellier, France.

2024 My thesis in 3 minutes Regional Finalist

University of Montpellier, France.

RESEARCH SKILLS

In vitro Cell culture, cancer cell lines, primary patient cells, PBMC isolation from whole blood, flow cytometry, apoptosis and cell cycle analyses, Western Blot, DNA/RNA extraction/purification methods, cDNA synthesis, RT-qPCR, IF, trypan blue exclusion method, SRB, MTT, mitochondria explorations (ROS production, MitoTracker, mitoview), analysis of sequencing datasets.

C. elegans Mutant strains, transgenic strains, drug screening, microscopy, microbiology preparations.

In vivo Cell-derived xenograft mice and patient-derived xenograft mice (handling, restraint, injection, tumor volume, humane methods of killing, bone marrow flushing, organ collection).

Software Microsoft Office, Graphpad-Prism, GuavaSoft, ImageJ, Leica LAS X, XLStat.

Other Protocol development, experimental design, cross-disciplinary collaboration, supervision and mentoring of students, writing, and public speaking.

LANGUAGES

English	Full professional proficiency
French	Full professional proficiency
Arabic	Fluent/Native
Spanish	Limited working proficiency

REFERENCES

Hiba El Hajj, Associate Professor, American University of Beirut (AUB), Lebanon.

Pierre-Antoine Bonnet, Professor, French National Academy of Pharmacy Vice-President, France.

Simon Galas, Professor, University of Montpellier, France.



www.perlamakhoul.eu

