Leidy J. García Maza

Contact Information

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My research aligns with the exploration of bioactive compounds for drug discovery, with a strong focus on tackling antimicrobial-resistant infections, including biofilm-associated challenges, and cancer treatments. I integrate multidisciplinary approaches from Organic Chemistry and Microbial Bioprospecting to unravel fundamental mechanisms and foster healthcare solutions. My work also leverages advanced analytical techniques and computational tools, aiming to contribute significantly to the global scientific community.

Education

Master's in Pharmaceutical Sciences (Expected 2026**)**, Universidade Federal do Rio Grande do Sul (UFRGS), Brazil.
Thesis: Scoping the unexplored marine bioactive compounds: Restinga-ecosystem bacterial and fungal metabolites as potential antibiofilm agents.
Advisor: Alexandre José Macedo, PhD.

Bachelor 's Degree in Chemistry (Spring 2023**)**, Universidad del Atlántico, Barranquilla, Colombia.

Thesis: imino Diels-Alder reaction in the construction of several tetrahydroquinoline derivatives. Study of their properties as regulatory agents of Quorum sensing in *Pseudomonas aeruginosa*.
Advisor: Carlos Meléndez Gómez, PhD.

Professional experience

HPLC Chemist Analyst (Summer 2023**),** *Supramolecular Chemistry Research Group, Universidad del Atlántico, Colombia.*

- *Developed HPLC-UV analytical methodologies for quality control of active ingredients in medicinal products within the Atlántico Department, Colombia.*

  Advisor: Victoria Arana & Andrea Ramos.

Academic Tutor (Spring 2023**),** *Educational Progress Route, Department of Atlántico, Colombia.*

- *Strengthened fundamental biology skills for upper secondary school students.*
- *Collaborated with Psycho-Pedagogical Matrices to deliver targeted educational programs.*

  Company: Psycho-Pedagogical Matrices.

Research Intern (2021 - 2022**),** *Organic and Biomedical Chemistry Research Group, Universidad del Atlántico, Colombia.*

- *Conducted organic synthesis employing conventional methodologies and established synthetic techniques.*
- *Separated and purified compounds using chromatographic techniques (thin-layer chromatography and column chromatography).*
- *Interpreted UV-Vis, IR, and NMR spectra (1H, 13C, DEPT 135, COSY, HMBC, HSQC, NOESY) and performed Mass Spectrometry (MS) analysis.*

  Advisor: Carlos Meléndez Gómez.

Research Experience, Publications, and Projects

Peer-Reviewed Publications

- **García, L.**; Salgado, A.; Kouznetsov, V. V; Meléndez, C.M., ***Pyrrolo[2,1-a]isoquinoline scaffolds for developing anti-cancer agents***., *RSC Adv*, **2024**, 14, 1710–1728. DOI: 10.1039/D3RA07047F.

- **García Maza, L.J.**; Orosco Flórez, D.F.; Salgado, A.R.M.; Rosales, W.; Mendoza-Torres, E.; Meléndez, C.M., ***A mild catalyzed imino Diels-Alder reaction for the synthesis of N-(2-(o-tolyl)-1,2,3,4-tetrahydroquinoline-4-yl)formamide derivatives as regulators of Quorum Sensing in***

Pseudomonas aeruginosa., *Results Chem.*, **2023**, 6, 101210. DOI: 10.1016/j.rechem.2023.101210.

Skills

Laboratory Techniques

- ***Microbiology Assays:*** *Bioactive compound testing, bacterial growth studies, and biofilm formation analysis.*
- ***Organic Synthesis:*** *Design and execution of synthetic routes, including compound identification using spectroscopic techniques.*
- ***Chromatographic Techniques:*** *HPLC, TLC, and column chromatography.*
- ***Spectroscopic and Spectrometric Analysis:*** *UV-Vis, IR, NMR (1H, 13C, DEPT 135, COSY, HMBC, HSQC, NOESY), and Mass Spectrometry (MS).*

Computational Skills

- ***Programming and Data Analysis:*** *R, Python.*
- ***Scientific Software:*** *ChemDraw, SPSS, GraphPad Prism, MATLAB.*
- ***Data Management and Visualization:*** *Microsoft Excel.*

Professional Credentials

- ***Professional Chemist License***
  Issued by Professional Council of Chemistry Colombia (CPQCOL, by its acronym in Spanish).
  License Number: PQ-09181.

Courses and certifications

- **Uncomplicating the biostatistics in SPSS: fundamentals and practical applications for postgraduates**
  XVI Postgraduate Program Meeting in Pharmaceutical Sciences - Federal University of Rio Grande do Sul | Assistant
  11/2024 | Duration: 04 hours | PORTO ALEGRE, BRAZIL

- **Theoretical and Practical Course: Basic Aspects of Research with Laboratory Animals**
  Centre for Reproduction and Experimentation of Laboratory Animals - Federal University of Rio Grande do Sul
  06/2024 | Duration: 34 hours | PORTO ALEGRE, BRAZIL

- **Advanced Course on High-Performance Liquid Chromatography (HPLC)**
  Pharmaceutical Services & Consulting | Assistant
  09/2023 | Duration: 16 hours | Final Score: 100/100 | ONLINE

Conferences and Talks

Event: 35th Latin-American Chemistry Congress and 61st Brazilian Chemistry Congress;
Type of participation: *Poster Presentation;*
Title: *A mild catalyzed Imino-Diels Alder reaction. Synthesis of N-(2-(o-tolyl)-1,2,3,4-tetrahydroquinoline-4-il)formamide derivatives as antimicrobial agents;*
Place: *RIO DE JANEIRO, BRAZIL - Windsor Florida Convention Center;*
Date: *14/11/2022 – 18/11/2022.*

Event: *Caribe Microbial Meeting;*
Type of participation: *Poster* Presentation;
Title: *Effect of a series of N-(2-(o-tolyl)-1,2,3,4-tetrahydroquinoline-4-il)formamide derivatives on bacterial growth and biofilm formation in Pseudomonas aeruginosa;*
Place: *VALLEDUPAR, COLOMBIA - Universidad Popular del Cesar;*
Date: *28/10/2022.*

Languages

- **Portuguese (**Brazil**):** Read: **C1** | Speak: **B2** | Write: **A1** | Listen: **C1**
- **English:** Read: **C1** | Speak: **B2** | Write: **C1** | Listen: **B2**
- **Spanish:** Native Speaker