

# Leidy J. García Maza

## Contact Information

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*My research focuses on the exploration of bioactive compounds for drug discovery, with a particular emphasis on addressing antimicrobial-resistant infections and biofilm-associated challenges. This work integrates multidisciplinary approaches, including Organic Chemistry and Microbial Bioprospecting, to unravel fundamental mechanisms and develop innovative healthcare solutions. Additionally, I leverage advanced analytical techniques and computational tools to contribute meaningfully 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 ( $^1\text{H}$ ,  $^{13}\text{C}$ , 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](https://doi.org/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**

## Honors and Awards

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- **CAPES Scholarship, Brazil.** Fully funded postgraduate scholarship awarded for academic excellence and potential in research.

## Skills

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### 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 (<sup>1</sup>H, <sup>13</sup>C, 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

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

## Courses and certifications

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- **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

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**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-yl)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-yl)formamide derivatives on bacterial growth and biofilm formation in *Pseudomonas aeruginosa*;

**Place:** VALLEDUPAR, COLOMBIA - Universidad Popular del Cesar;

**Date:** 28/10/2022.

## Languages

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