Researcher Position in Organic Chemistry

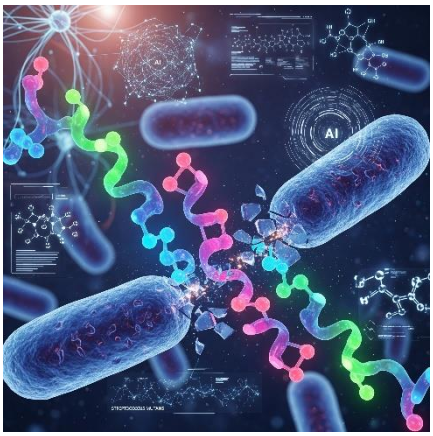
Synthesis of AI-Designed Antimicrobial Ultrashort Peptides

Institution: Institut des Sciences Moléculaires (Team ORGA), Université de Bordeaux, Talence, France

Application Deadline : October 1st, 2025

Profile required : We are seeking a candidate (M/F) with a Master's degree (MSc) or PhD in Organic Chemistry, with strong expertise in organic synthesis and compound characterisation (NMR, IR, MS, etc.), eager to work on a trans-disciplinary project. The ideal candidate will demonstrate excellent communication and teamwork skills, a strong sense of research ethics, and a proven ability to work both independently and collaboratively.

Project : To fight antibiotic resistance observed in oral and dental pathologies remains a major public health concern worldwide. In response to this challenge, research is exploring new strategies to limit the proliferation of *S. mutans* which plays a central role and is also involved in serious extra-oral infections such as certain heart diseases. Our project aims to develop novel AI-generated ultra-short antimicrobial peptides and analogues with fluorescent and/or polyamines moieties, effective against *S. mutans*. Machine learning models will help optimizing the selection and design of more effective peptides. The combination of activity tests with imaging methods will provide valuable insights into their antimicrobial efficiency and interactions with *S. mutans*. The results of this project will open new perspectives for the prevention and treatment of severe dental diseases.



Position Overview : You will be an integral part of our research group focused on organic chemistry (synthesis of fluorescent probes for biological applications, boron chemistry, …). The successful candidate will have the opportunity to work on an innovative project involving the synthesis of new AI-generated small organic molecules effective against *Streptococcus mutans*, in close collaboration with two others laboratories from the campus (OENO in charge of biological studies and LABRI in charge of AI-assisted design). You will access state-of-the-art facilities, and contribute to a stimulating research environment within ISM.

Key Responsibilities : Design and carry out multi-step organic synthesis to develop novel ultra-short peptides and derivatives with antimicrobial properties. Analyze and characterize products using various spectroscopic and analytical techniques (e.g., NMR, MS, UV-Vis, fluorescence). Collaborate with interdisciplinary teams to advance shared research goals. Supervise and mentor graduate and undergraduate students within the laboratory.

Salary : The gross monthly salary starts at €2,800.00, depending on qualifications and experience.

How to Apply : Send to emilie.genin@u-bordeaux.fr: cover letter, CV (2 pages max) including references, list of publications, 4 pages summary of previous research experience.

This research position is funded by Bordeaux University (interdisciplinary and exploratory research program) for at least a 12-months duration.