

PhD position offer: Dual inhibitor design for inflammatory processes

A PhD position is open for applications for a **36-month PhD contract** at *La Rochelle Université* as part of an **EU-funded** interdisciplinary project on inflammation and cancer, in collaboration with the *University of Calgary (Canada)* and *MolDrug AI Systems (Spain)*. The project aims to develop novel dual inhibitors targeting two key enzymes: **Heparanase 1 (HPSE1)** and **Membrane-Type Matrix Metalloproteinase 1 (MT1-MMP)**, involved in macrophage regulation and inflammatory responses.

Project overview

- **Research focus:**
 - **Drug design & synthesis:** Create and optimize bio-inspired small molecules (<400 Da) using computational methods, QSAR, and structure-based design.
 - **Mechanistic studies:** Investigate how HPSE1 and MT1-MMP regulate macrophage polarization via enzymatic cleavage of HSPGs, employing in vitro assays, cell-based experiments, and advanced proteomics.
 - **Therapeutic validation:** Assess the potential of these dual inhibitors as cost-effective anti-inflammatory agents.
- **Collaborative framework:**
 - **La Rochelle Université (France):** Expertise in chemical synthesis and bio-inspired molecule development.
 - **University of Calgary (Canada):** Advanced proteomics, N-terminomics, and bioinformatics.
 - **MolDrug AI Systems (Spain):** Specialization in molecular docking and structure-based drug design.

Candidate profile

- **Educational background:** Master's degree in chemistry, biochemistry, or a related field.
- **Technical skills & interests:** A strong foundation in drug discovery techniques, mass spectrometry, proteomics, bioinformatics, and cell biology.
- **Mobility requirement:** Must comply with the Marie Skłodowska-Curie mobility rule.
- **Inclusivity:** Open to candidates with a Qualified Health and Disability certificate (RQTH).

Training & timeline highlights

- **Interdisciplinary training:** Gain hands-on experience in molecular docking, chemical synthesis, bioinformatics, and advanced analytical techniques through a structured program across partner institutions.
- **Phased learning:**
 - Introductory courses in synthesis and biological techniques at La Rochelle.
 - Specialized training in computational drug design and bioinformatics with MolDrug AI Systems.

- Advanced proteomics and analytical methods at the University of Calgary.

Benefits & application process

- **Location:** La Rochelle Université, France
- **Salary:** €2700 gross per month
- **Application Deadline:** 15 March 2025
- **Required Documents:** Resume/CV, cover letter, proof of identity, Master's transcript, and completed application form (all in English)
- **Contact:** eudocs_cofund@univ-lr.fr

For more details and the complete application process, please visit the [Euraxess Job Portal](https://euraxess.ec.europa.eu/jobs/308642). (<https://euraxess.ec.europa.eu/jobs/308642>)

For any inquiries, please contact: eudocs_cofund@univ-lr.fr.