Call for PhD 2 fellowship (DC2)

MSCA – Doctoral Network

Lectin LIgands for Modulation of ImmuniTy = LLiMiT

LLIMIT is a European doctoral training network dedicated to advancing immunomodulatory glycoscience. Its aim is to empower a new generation of researchers with the skills to design and develop ligands/antagonists targeting immune-related lectins—an innovative but underexplored therapeutic strategy against immune disorders such as allergy, cancer and autoimmunity, one of today's major global health challenges. The consortium unites 7 academic institutions with accredited PhD programs in organic and medicinal chemistry, molecular biology, structural biology, immunology and pharmacology, each with strong expertise in glycoscience. They are joined by 7 non-academic partners and a graduate and research academy, ensuring comprehensive, cross-sector training that spans fundamental science, translational research, and entrepreneurship. Key objectives of LLIMIT include: a) recruiting and training 14 doctoral candidates in a joint, research-based program supported by expert supervision and specialized training events, b) advancing innovative research on immune lectins and carbohydrate ligands, covering the full early drug discovery pipeline: from target identification and validation, through advanced glycochemistry and drug design, to hit and lead discovery; c) establishing a sustainable foundation for European excellence in glycodrug and immunomodulatory research; d) developing a common glycodrug curriculum across participating institutions to standardize and strengthen education in this field; e) building and maintaining long-term partnerships that ensure continuity in training, research, and innovation well beyond the project's duration.

DC2 PROJECT TITLE. ***Design and Evaluation of Galectin-9 Non-Carbohydrate Ligands***.

Host Institution: Department of Pharmaceutical Chemistry, University of Ljubljana (UL FFA), Slovenia. https://www.ffa.uni-lj.si/

Duration: 36 months, April 2027 - March 2030* (*possible extension of 1 year).

Supervisor: Prof. Dr. Marko Anderluh. profile; profile – ResearchGate

Co-supervisors: Prof. Dr. Ulf Nilsson (Lund University, Sweden), Dr. Edvin Purić (UL FFA, Slovenia)
Progress Committee Members: Prof. Dr. Ulf Nilsson (Lund University, Sweden), Dr. Nuska Tschammer (Crelux GmbH, Germany).

DC1 PROJECT. DC2 will identify, synthesise and optimise non-carbohydrate inhibitors of galectin-9 (Gal-9) through virtual screening, DNA-encoded library screening and structure-based design, followed by the evaluation of their binding affinity, selectivity and structure–activity relationships. Selected inhibitors will be characterised through biophysical and structural studies, including attempts to determine co-crystal structures, and evaluated in advanced cellular models to investigate their potential to modulate immune checkpoint inhibition. The project will also develop non-carbohydrate-based Gal-9 PROTAC degraders by linking Gal-9 ligands to E3 ligase ligands, assess their binding properties, ternary complex formation, stability and cell permeability, and evaluate their ability to degrade Gal-9 and modulate immune checkpoint inhibition *in vitro*.

PLANNED SECONDMENTS. 1. Lund University, Sweden (Prof. Dr. Ulf Nilsson), DC2 will determine the binding affinities of the Gal-9 hits; 2. Crelux GmbH, Germany (Dr. Nuska Tschammer), DC2 will perform DNA-encoded libraries screening using the DELopen platform; 3. Selvita d.o.o., Croatia (Dr. Jasna Padovan), DC 2 will perform a PAMPA permeability assay and by LC-MS analysis of cell lysates.

PhD School enrolment: Biomedicine PhD School at the University of Ljubljana, Scientific field of Pharmacy. https://www.uni-lj.si/study/doctoral/biomedicine

APPLICATION PROCEDURE

The position is open to candidates of any nationality, provided they meet the eligibility requirements for Doctoral Candidates (DCs) funded under the Marie Skłodowska-Curie Actions (MSCA), as defined in Section 1.3.2, "Recruited researchers", of the Horizon Europe Work Programme 2026–2027.

Applicants must complete the **LLIMIT Application Form** (provided as a separate document, available at https://llimit.eu/) and submit it, together with all the required supporting documents listed in the form, to llimit@ffa.uni-lj.si by **15 January 2027**. The application for the first round of candidate assessment should consist of the following documents:

- Completed LLIMIT application form;
- Curriculum Vitae (CV) in the Europass format: https://europass.europa.eu/en/create-europass-cv including the details of education and qualifications, work experience, language skills and other relevant skills;
- Motivation Letter;
- Transcript of record (academic studies) and master's degree certificate (when available);
- Two letters of recommendation from academics or research professionals;
- A summary of the master's degree thesis or a brief description of the past scientific activity;
- A short critical summary of a selected paper: https://www.nature.com/articles/s42004-025-01458-6,
- Copy of the valid ID card or Passport.

Please use the subject line "*Application for DC2 position*". The five highest-ranked applicants following the first round of candidate assessment will be invited for an interview.

The salary of the DCs will be paid according to the MSCA rules. See: https://marie-sklodowska-curie-actions.ec.europa.eu/funding/msca-doctoral-networks-2026

CANDIDATE PROFILE

- 5-years degree (Master) in Pharmacy, Chemistry, Medicinal Chemistry or related fields,
- Experience in medicinal chemistry, organic chemistry and biophysical techniques is welcome,
- Good level of English proficiency (understood, spoken and written),
- Team spirit and proactive attitude.

Information also available at: https://euraxess.ec.europa.eu/ and https://llimit.eu/.