Call for PhD 3 fellowship (DC3)

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 seven 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 seven 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.

DC3 PROJECT TITLE. ***Discovery of non-carbohydrate galectin-9 inhibitors using crystallographic and biophysical fragment screening***

Host Institutions: Centre for Molecular Protein Science, Dept. of Chemistry, Lund University (ULUND), Sweden. https://cmps.lu.se/; Dept. of Pharmaceutical Chemistry, University of Ljubljana (UL FFA), Slovenia.

Duration: 48 months, April 2027 - March 2031

Supervisors: Prof. Derek Logan profile; profile – Google Scholar

Co-supervisors: Dr. Tihomir Tomašic (UL FFA), Slovenia profile; profile – ResearchGate;
Progress Committee Members: Prof. Dr. Franck Fieschi (Université Grenoble Alpes, France), Dr. Nadia Rose (SARomics Biostructures).

DC3 PROJECT. The research programme of DC3 aims to advance the development of novel non-carbohydrate ligands targeting human galectin-9, with the ultimate goal of modulating immune responses and exploring new therapeutic opportunities in cancer immunotherapy. DC3 will design a non-carbohydrate fragment library in collaboration with the company SARomics Biostructures, and screen this library using weak affinity chromatography (WAC). DC3 will also carry out a crystallographic fragment screening campaign using the FragMAX platform at the MAX IV synchrotron, using the designed library or other libraries. Fragments will be expanded into larger molecules that better exploit binding pockets on galectin-9. Synthetic strategies for expansion and/or merging of bound fragments will be explored. The resulting development compounds will be tested in immunological *in vitro* cell assays. The goal is to achieve one or more non-carbohydrate galectin-9 inhibitors with K_d < 1 μM.

PLANNED SECONDMENTS. 1. SARomics Biostructures, Lund, Sweden. DC3 will design a specific fragment library with suitable properties to target galectin carbohydrate recognition domains and test them using WAC: 2. Red Glead Discovery, Lund Sweden. DC3 will analyse expanded fragments for ADME and biophysical properties; 3. Laboratory of Prof. Dr. Phillip Lang, University of Düsseldorf: development compounds will be tested in immunological *in vitro* cell assays.

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.

The applicant must apply at the Lund University application web site (https://lu.varbi.com) and comply the specific application requirements by **15th January 2027**, clearly indicating in the subject "*Application for DC3 position*".

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

- Masters degree in Pharmacy, Chemistry, Medicinal Chemistry, Structural Biology or related fields
- Experience in structural biology, 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/.

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