Call for PhD fellowship (DC9)

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 (DCs) 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.

DC9 PROJECT TITLE. ***Identification and molecular characterization of CLRs/ligand couples for selective immune modulation and immune intervention***.

Host Institution: Institut de Biologie structurale, University of Grenoble Alpes (UGA), France. http://www.ibs.fr

Duration: 36 months, April 2027 - March 2030*

Supervisor: Prof. Dr. Franck Fieschi. M&P group, ProfileIUF, Profile google scholar

Co-supervisors: Prof. Dr. Marko Anderluh (UL FFA, SLO), Prof. Dr. L Belvisi (UMIL, IT)
Progress Committee Members: Prof. Dr. Marko (UL FFA, SLO), Dr. Ludovic Landemarre (Glycodiag, FR).

DC9 PROJECT. The research programme of DC9 aims to contribute to the development and identification of new glycomimetics targeting a specific set of C-type Lectin Receptors (CLRs) from human dendritic cells (DCs) or phagocytic cells in order to explore new therapeutic opportunities in immunomodulation and cancer immunotherapy. DC9 will have the following 3 main objectives.
1) Development and production of recombinant C-type lectin receptors (DC-SIGN, MGL, MMR, Clec17a, Dectin-2) from different DC subsets or phagocytic cells. These CLRs have been identified as potential target to impact tumoral development. DC9 will use *E. coli* and/or eucaryotic expression systems depending on the CLR.
2) Glycan interaction assays to screen new selective glycomimetic to target the CLRs of interest. DC9s will use Surface Plasmon Resonance (SPR), Biolayer Interferometry (BLI) and Isothermal Titration Calorimetry (ITC) to characterize the interaction properties of the mimetics produced by other DCs within the network. DC9 will contribute to the production and design of these glycomimetics in collaboration through secondments (see below). For ligands arising from this screening, DC9 will generate neoglycomimetic proteins -based on BSA- with the partner Glycodiag and their validation by biophysical studies. The *in vivo evaluation* of the identified ligands/agonists

pairs and corresponding neoglycomimetic-BSA will then be evaluated on dendritic cells and phagocytic cells through collaboration within the Network.
3) Structure determination for MMR or Clec17a, which are not already structurally characterized targets (by single particle cryo-EM and/or X-ray). Moreover, for all CLRs, DC9 will also investigate the structure of the identified ligand/CLR pairs complexes in order to describe the binding mode of the mimetics and allow the design of a second generation of compounds.

PLANNED SECONDMENTS. 1. University of Ljubljana (Prof. Dr. Marko Anderluh) DC9 will participate to the synthesis of new D-GalNAc mimetics to identify new selective MGL ligands. 2. University of Milan (Prof. Dr. Laura Belvisi) DC9 will contribute to the design of ligands targeting Clec17a receptor. 3. GlycoDiag, Orleans-France (Dr. Ludovic Landemarre) DC9 will generate neoglycomimetic proteins based on BSA and their validation by biophysical studies.

PhD School enrolment: Doctoral School Chemistry and Life Sciences (ED CSV) at the University of Grenoble, https://edcsv.univ-grenoble-alpes.fr/

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://pubs.rsc.org/sc/article/15/37/15352/869322/Unprecedented-selectivity-for-homologous-lectin
- Copy of the valid ID card or Passport.

Please use the subject line “*Application for DC9 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 Biochemistry, Structural Biology, Biophysics, Pharmacy, or related fields,

- Experience in recombinant protein production, biomolecular interaction using biophysical techniques (SPR, ITC, BLI, MST), glycobiology is welcome,
- Good knowledge in Immunology, cell biology 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/.