Call for PhD 6 fellowship (DC6)

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.

DC6 PROJECT TITLE. ***Characterizing Siglec-6-mediated immunoregulation in human memory B cells***

Host Institution: Department of Pharmaceutical Sciences, Utrecht University, (UU), the Netherlands. Department of Pharmaceutical Sciences - Utrecht University

Duration: 48 months, April 2027 - March 2031.

Supervisor: Dr. Balthasar A. Heesters; lab website

Co-supervisors: Prof. Dr. Roland Pieters (UU), Prof. Dr. Daniel Ricklin (University of Basel), Dr. Martin Stieler (BIMOVIS)

DC6 PROJECT. This project will investigate how Siglec-6 engagement regulates activation and survival decisions in human memory B cells. Siglec-6 is an inhibitory receptor expressed on human memory B cells, but its functional role in B-cell signaling and tolerance remains incompletely understood. Using the pre-characterized Siglec-6 ligand sialyl-Tn, alongside multivalent Siglec-6 ligands, the doctoral candidate will study this pathway in human tonsil tissue models and related assays. The project will focus on human samples and will not use animal models.

DC6 will have the following objectives:

1) Determine the effects of Siglec-6 engagement on human memory B-cell activation and survival. The doctoral candidate will assess how sialyl-Tn affects B-cell activation, including CD69 and CD86 expression, and cell survival using assays such as Annexin V/propidium iodide staining and caspase-3 measurements. Experiments will use human tonsil slice cultures to preserve the native B-cell environment and investigate effects relevant to B-cell tolerance.

2) Characterize multivalent Siglec-6 ligands and their effects on signaling. The candidate will study pre-synthesized tetra- and hexavalent Siglec-6 ligands, including how ligand presentation and multivalency influence Siglec-6-mediated responses. Biophysical characterization will be carried out in collaboration with the LLIMIT network, including use of isothermal titration calorimetry (ITC). During a non-academic secondment at BIMOVIS, the candidate will attempt structural studies of Siglec-6 with selected multivalent compounds.

3) Investigate the effect of Siglec-6 on CR2-dependent B-cell signaling. During an academic secondment at the University of Basel, the candidate will examine how Siglec-6 engagement affects CR2-dependent signaling in human tonsil models. Readouts will include phosphorylation of signaling proteins such as SYK, BLNK, and ERK; calcium flux; and expression of survival-associated proteins including BCL-2 and BCL-XL.

The project is expected to clarify how Siglec-6 engagement influences human memory B-cell activation and survival, determine how multivalent ligands affect Siglec-6 function, and assess the role of Siglec-6 in CR2-dependent signaling and B-cell tolerance.

PLANNED SECONDMENTS. 1) University of Basel (Prof. Daniel Ricklin): investigation of Siglec-6 effects on CR2-dependent signaling in human tonsil models. 2) BIMOVIS (Dr. Martin Stieler): training in structural biology and attempted co-crystallization of Siglec-6 with selected multivalent compounds.

PhD School enrolment: Graduate School of Life Sciences, Utrecht University, PhD program Infection and Immunity. PhD programme - Infection & Immunity - Utrecht University

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.sciencedirect.com/science/article/pii/S0006291X26015263?via%3Dihub,
- Copy of the valid ID card or Passport.

Please use the subject line “*Application for DC6 position*”. The five highest-ranked applicants following the first round of candidate assessment will be invited for an interview.

This PhD position is at Utrecht University. Your employment as a PhD candidate will be subject to Utrecht University's terms and conditions of employment:

- a position for 18 months, with an extension to a total of four years upon a positive assessment in the first 18 months;
- a gross monthly salary starting at € 3,204 in the first year and increasing annually up to €4,051 in the fourth year between (salary scale P under the Collective Labour Agreement for Dutch Universities (CAO NU). The salary is based on a 38-hour working week;
- 8% holiday pay and 8.3% year-end bonus;
- a pension scheme, partially paid parental leave and flexible terms of employment based on the CAO NU.

In addition to the terms of employment set out in our collective labour agreement, we offer attractive additional benefits, including opportunities for personal and professional growth, flexible leave arrangements, and extra vacation days. Through the UU Terms of Employment Options Model, you can tailor your employment package to your needs. In this way, we encourage you to grow in what you do, both in your work and in your development. Read more about our terms of employment.

CANDIDATE PROFILE

- 5-years degree (Master) in immunology, biology, biomedical sciences, molecular or cellular biology, or a related field.
- Experience with human immune cells, flow cytometry, cell-signaling assays, or tissue culture is an advantage.
- Interest in B-cell biology, immunoregulation, or glycobiology.
- Good written and spoken English.
- Team spirit, curiosity, and a proactive approach to research.

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