Call for PhD 1 fellowship (DC11)

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.

DC11 PROJECT TITLE. ***Sialomimetic Chemical Probes for Siglec-9: Toward Precision Immunotherapy***

Host Institution: Institute for Pharmaceutical and Medicinal Chemistry, Heinrich Heine University of Düsseldorf. https://www.hhu.de/

Duration: 36 months, April 2027 - March 2030

Supervisor: Jun.-Prof. Dr. Jonathan Cramer. https://cramerlab.de/

Co-supervisor: Prof. Dr. Roland Pieters (UU, NL).
Progress Committee Members: Prof. Dr. Roland Pieters (UU, NL), Dr. Martin Stieler (BIMOVIS).

DC11 PROJECT. The research programme of DC11 aims to advance the development of potent and selective sialomimetic ligands targeting Siglec-9, with the ultimate goal of enabling targeted immunomodulation and paving the way for novel precision immunotherapies. DC11 will design and synthesize novel sialomimetic Siglec-9 ligands using structure- and ligand-based approaches. These ligands will be further developed into drug–drug conjugates to enable targeted pharmacological activation of macrophages. In addition, multivalent presentation of Siglec-9 ligands on hyperbranched polyglycerol scaffolds will be explored to convert monovalent antagonists into agonists, in collaboration with UU. DC11 will establish structure–activity relationships and investigate the affinity and selectivity of the newly developed ligands using a range of biophysical methods and cross-screening against related Siglec receptors, in collaboration with UNIBAS.

PLANNED SECONDMENTS. 1. University of Utrecht (Prof. Dr. Roland Pieters) DC11 will synthesize hyperbranched polyglycol-based multivalent ligands as potential agonists of Siglec-9 2. University of Basel (Prof. Dr. Daniel Ricklin) DC11 will determine compound selectivity by counter screening selected ligands against a panel of related receptors. 3. DC11 will receive basic training in structural

biology methods in a drug discovery context during an industrial secondment at BIMOVIS (Heidelberg).

PhD School enrolment: PhD school of the Faculty of Mathematics and Natural Sciences of Heinrich Heine University Düsseldorf, Scientific field of Pharmacy. https://www.math-nat-fak.hhu.de/en/doctoral-research

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 via the career portal of Heinrich Heine University of Düsseldorf (https://karriere.hhu.de/index.php?ac=start) by **15th January 2027**.

The salary of the DCs will be paid according to pay grade E13 TV-L.

CANDIDATE PROFILE

- A completed university degree in Chemistry or Pharmacy (Master's degree or equivalent), or an equivalent qualification providing access to doctoral studies and including demonstrable practical training in organic chemistry.
- Proven practical experience in preparative organic synthesis.
- Practical experience with common analytical methods in organic chemistry, particularly NMR spectroscopy and mass spectrometry.
- Very good written and spoken English.
- Willingness to undertake international laboratory rotations at the European partner institutions of the LLIMIT consortium.
- Willingness to participate in the structured training and qualification programme of the MSCA Doctoral Network, including activities abroad.

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