

The LIT - Leibniz Institute for Immunotherapy (foundation under civil law) (<https://lit.eu/>) - is a biomedical research center focusing on translational immunology in the fields of cancer immunotherapy, transplant rejection and autoimmunity. The objective of the LIT is to develop efficient immune therapeutic strategies in these areas. Close networking between University and University Hospital thus offers high research efficiency and an excellent research environment.

The Division of Nucleic Acids Technologies, led by Professor Katharina Höfer, is recruiting a highly motivated

Postdoctoral fellow (m/f/d) – KH-2026-4

RNAylation Engineering and Nucleic Acid–Protein Conjugates

The position is available starting in December and is initially limited to two years with the possibility of extension.

Position Description

This position is part of an ambitious research programme funded by a European Research Council (ERC) grant. The project aims to establish RNAylated proteins as a new platform for programmable nucleic acid–protein conjugates and future therapeutic applications. RNAylation is an enzyme-catalysed strategy that covalently links nucleic acids to proteins through a naturally occurring bond.

The successful candidate will develop and optimise biochemical approaches to generate defined RNAylated biomolecules and to establish design principles for their controlled, reproducible, and scalable production.

The project will involve protein and enzyme engineering, the preparation of modified nucleic acid substrates, and the development of modular systems that enable different proteins and nucleic acids to be combined. The candidate will characterise the resulting conjugates and explore their potential as molecular tools for biological and therapeutic applications.

Responsibilities include, but are not limited to:

- Designing, cloning, expressing, and purifying RNAylation enzymes, protein tags, and target proteins.
- Delivery of RNA into cells
- Developing and optimising enzymatic RNAylation reactions for the controlled production of nucleic acid–protein conjugates.
- Engineering enzymes or protein modules to improve activity, specificity, solubility, stability, or yield.
- Preparing and testing NAD- or NXD-capped RNA and other modified nucleic acid substrates.
- Establishing modular conjugation and purification workflows for RNAylated proteins.
- Characterising products using biochemical and analytical approaches, including gel-based assays, fluorescence readouts, chromatography, Western blotting, mass spectrometry, and proteomics.
- Analysing data, preparing publications and presentations, and contributing to a collaborative laboratory environment.
- Co-supervising students and supporting the development of new research directions.

The ideal candidate possesses:

- A Ph.D. in Biochemistry, Molecular Biology, Chemical Biology, Synthetic Biology, Biotechnology, Pharmaceutical Sciences, or a related discipline.
- Experience in recombinant protein production, protein purification, enzymology, RNA biochemistry, nucleic acid chemistry, or protein engineering.
- Experience in field of CRISPR-Cas or in the field of RNA delivery is advantageous.
- Experience with in vitro transcription, RNA modification or labelling, chromatography, fluorescence assays, mass spectrometry, or proteomics is advantageous.
- Creativity, independence, and strong problem-solving skills for the development of new biochemical workflows.
- A strong track record of publications in high-impact peer-reviewed journals
- Excellent written and oral communication skills, with fluency in English
- High motivation to work in an interdisciplinary, innovative, and collaborative research environment

We offer:

- A vibrant international research environment at the forefront of RNA biochemistry innovation
- Access to state-of-the-art technologies in functional genomics, nucleic acids biology, molecular biology, biochemistry
- Strong infrastructure for translational and clinical development
- Flexible working hours
- Flat hierarchies and rapid decision-making processes
- A highly motivated, interdisciplinary, international and supportive team
- Job ticket and excellent benefits
- Outstanding funding and long-term scientific perspectives

The remuneration is based on TV-L.

The Leibniz Institute for Immunotherapy targets to increase the share of women in the workforce. Therefore, qualified female candidates are explicitly encouraged to submit their applications. Moreover, the LIT advocates for the compatibility of family and career.

Disabled applicants (m/f/d) with equal qualifications will receive preferential treatment within the recruitment procedure. Please refer to your disability status already in your application.

Please note that expenses that may arise in the context of an eventual job interview cannot be reimbursed.

For more information, please contact Prof. Dr. Katharina Höfer (katharina.hoefer@lit.eu). We are looking forward to receiving your detailed application. Please apply via our [Online - Application Portal](#) the reference **KH-2026-4**.

Application **deadline** is **November 01st, 2026**.

