

The Institute of Clinical Chemistry and Clinical Pharmacology (research group of **Prof. Dr. Kathrin Leppek**) at the Faculty of Medicine of the Rheinische Friedrich-Wilhelms-University Bonn invites applications for a

## PhD student (65% TV-L E13) or Postdoc position (100% TV-L E13) (m/f/d; 3 years)

### Project: Switchable immunomodulation of mRNA transport and local translation in microglia by bioactive RNAs

Applications are invited for a **3-year PhD position or Postdoc position** in the immunobiochemistry group at UKB in Bonn. The project, led by Dr. Kathrin Leppek, will focus on applying new molecular RNA photoswitches to regulate mRNA transport and translation targeting mRNA elements. More information about the research group can be found here: <https://www.ukbonn.de/en/icccp/research/leppek-group/>.

**Lab Description:** The Leppek lab focuses on deciphering how gene regulation is directly executed by the ribosome and how ribosome-directed specialized translation through ribosomal RNA shapes mRNA-selective gene expression. We combine innovative RNA biochemistry and modern RNA-based technology development with model systems ranging from yeast to macrophages to understand the role of the ribosome in innate immune responses. Bonn is a major hub of immunological research in Germany and our new lab is a growing, exciting, creative, innovative and inclusive place to mentor the next generation of scientists.

**Project Description:** The project is part of an international collaborative grant funded by the Human Frontiers Science Program (Early Career Award). The overarching aim is to use a multidisciplinary approach to apply *cis*-regulatory photoswitchable RNA tools that allow to control local mRNA transport and translation in microglia with applications in basic science and RNA therapeutics. The specific aim of this project is to identify, map, characterize and target functional mRNA structures in microglia mRNAs that regulate mRNA transport/translation that can be targeted with new light-activated RNA molecules. This work will involve a combination of RNA biochemical, molecular biology, cell biology assays, mRNA translation techniques, RNA structure probing and structure-function analysis, RNA target-switch design, establishment of RNA switch function in cultured cells and primary microglia. A close collaboration with the group of Prof. Daniël Broere (Uni Utrecht, NL) is expected throughout the project (including exchange visits). Later, collaborations with the labs of Prof. Dragomir Milovanovic (DZNE Berlin) and Prof. Meng-Meng Fu (UC Berkeley, USA) are also expected.

**Candidate Requirements:** The candidate (m/f/d) should hold a M.Sc. or PhD degree (or equivalent) in molecular biology/biomedicine or similar, and have a strong background in biochemistry and/or RNA biology. Experience or affinity with RNA structure probing, translation regulation, synthetic chemistry, immunology, microglia biology, or data science are desirable, but not required. The ideal candidate is enthusiastic and highly motivated, with very good communication skills and can work safely, independently and in a team environment, and values creativity and collaboration. The candidate should be excited to join an international research group in a highly dynamic working environment (with English as the main written/spoken language) and should be reliable, responsible and have high scientific standards. Because of the multidisciplinary international collaboration of which this project is part of, the ability/willingness to regularly travel internationally is essential.

**Offer:** The salary will be according to the German salary scale TV-L. A "Jobticket" (subsidized public transport) is available. There is also the possibility to use the day care center. Supplementary benefits in the public sector (pension plan according to VBL) are provided. The University of Bonn is committed to diversity and equal opportunity and is certified as a family-friendly university. It aims to increase the proportion of women in areas where women are under-represented and to promote their careers in particular. It therefore urges women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable individuals with a certified serious disability and those of equal status are particularly welcome.

**Application / Contact:** The ideal starting date is November 1<sup>st</sup> 2023 and is flexible, but earliest November 1<sup>st</sup> 2023. Motivated candidates are invited to send their application per email (incl. short letter of motivation, CV, two reference contacts, and list of grades) in one single pdf as soon as possible (as we will do rolling interviews) and **before 31<sup>st</sup> August 2023** directly to Dr. Kathrin Leppek ([kleppek@uni-bonn.de](mailto:kleppek@uni-bonn.de)).

**Prof. Dr. Kathrin Leppek**

Jun.Prof., TT W1, PhD (Dr. rer. nat.)

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