



## Job announcement no. 174/2021

The Helmholtz Institute for RNA-based Infection Research (HIRI) is offering a position as

### **Postdoc (all genders) within the ERC Funded Project T-FRAME**

in the Research Group “Recoding Mechanisms in Infections” of Junior Professor Neva Caliskan.

With her ERC-funded project "T-FRAME" Junior Professor Caliskan is investigating the relevance of so-called frameshifting in eukaryotic cells during infections. The segments of certain genes that carry the code for proteins, can also contain sequence elements that can hinder the production of proteins. However, these obstacles do not only cause problems, but also hold opportunities for the cell to increase its coding capacity by using an “alternative reading grid” also known as programmed ribosome frameshifting. Frameshifting has been extensively studied in viruses such as coronaviruses and bacteria, but is poorly understood in humans. Caliskan lab aims to close this gap by combining interdisciplinary expertise ranging from global to single-molecule analysis of frameshifting molecular complexes. Understanding the effects of frameshifting on infections and innate immunity will in the long run provide us with new tools for synthetic biology and new opportunities for RNA-centric antiviral drugs and immunotherapies.

The Caliskan lab is well equipped with access to a rapid quench flow, microscale thermophoresis, single-molecule fluorescence optical tweezers, confocal microscope and single-quad mass spectrometer assisted HPLC. In addition, the lab is entitled to use all core facilities both at HZI in Braunschweig and at the University of Würzburg.

#### **Responsibilities**

To work on this project, we are looking for highly motivated Postdoc candidates to study the regulation principles of programmed ribosome frameshifting events by employing an *in vitro* purified biochemical system. In this regard, we are especially interested in elucidating how the newly identified trans-acting factors and RNA structural elements effect translation elongation during coronavirus frameshifting. The project will involve analysis of frameshifting RNA-protein complexes (RNPs) by iCLIP, RAP and proteomic analysis, and developing assays for protein-RNA labeling for the single-molecule or ensemble analysis of translation.

The project will be carried out in a highly international, collaborative, and interdisciplinary work environment, with a range of possibilities to develop new skills.

#### **Requirements**

- PhD or equivalent in biochemistry, molecular biology, biophysics or a related field of the life sciences or engineering
- Exceptionally strong background in ribosome and RNA biochemistry including the analysis of RNP complexes and translation assays with purified components *in vitro* (through thesis, publications, or work experience)
- Experience with Python, MatLab or R for data analysis is a must
- Experience with single-molecule analysis methods and microscopy techniques (TIRF, confocal, light sheet), and image analysis is an advantage
- Experience in next-generation sequencing (RNA-seq and Ribo-seq), as well as NGS library preparations is desired
- Strong written and spoken English language communication skills



### We offer

We offer state-of-the-art infrastructure and cutting-edge technologies to promote scientific progress and interdisciplinary collaboration. We focus on a close integration of research and management and strive for excellence inside and outside the laboratory. Promoting equal opportunities and competencies for our employees and celebrating diversity are a matter of course for us. To ensure a good work-life balance, we have created a family-friendly atmosphere with flexible working hours and part-time models, a parent-child room and regular social activities.

Employment is through the Helmholtz Centre for Infection Research (Helmholtz-Zentrum für Infektionsforschung GmbH / HZI) in Braunschweig. The place of work is Würzburg. The position is suitable for part-time work. The HZI strives for professional equality between women and men. Severely handicapped persons with equivalent professional qualifications are given preference. In order to protect your rights, we kindly ask you to provide us with a reference to your degree of disability in your cover letter or resume.

<b>Starting date:</b>	As soon as possible. The contract will initially run for two years. However, a longer-term commitment is aspired regardless of full- or part-time.
<b>Salary:</b>	E 13 TVöD Bund
<b>Place of work:</b>	Würzburg
<b>Probation period:</b>	6 months
<b>Published:</b>	18.11.2021
<b>Closing date:</b>	05.12.2021

### How to apply

We look forward to receiving your complete application including a cover letter, CV without picture, certificates, and reference projects. You are also welcome to provide us with reference names in your CV. Please send your application quoting the reference number 174/2021 to the Helmholtz Centre for Infection Research GmbH, Human Resources Department, Inhoffenstr. 7, 38124 Braunschweig, Germany or by email to [JobsHIRI@helmholtz-hzi.de](mailto:JobsHIRI@helmholtz-hzi.de). If you send your application in electronic form, please provide a **summary in one single (1) pdf document**. For further information please contact Junior Professor Caliskan, email: [neva.caliskan@helmholtz-hiri.de](mailto:neva.caliskan@helmholtz-hiri.de).

When sending us your application documents, please confirm that you have read our privacy policy and that you agree to the processing of your personal data. Please use the text module in our [privacy policy](#) for this purpose. Without these declarations we cannot consider or process your application and will immediately delete any application documents already received after the application deadline.

### About the HIRI

The Helmholtz Institute for RNA-based Infection Research (HIRI) is the first institution worldwide to combine ribonucleic acid (RNA) research with infection biology. Based on novel findings from our strong basic research program, our long-term goal is to develop innovative therapeutic approaches to better diagnose and treat human infections. HIRI is a joint venture of the Helmholtz Center for Infection Research (HZI) in Braunschweig and the Julius Maximilians University of Würzburg (JMU) and is located on the Würzburg Medical Campus. More information at [www.helmholtz-hiri.de](http://www.helmholtz-hiri.de).