ERC-funded Postdoctoral Researcher (m/f/d)
at the University of Regensburg
Department of Biochemistry III headed by Prof. Neva Caliskan

The Caliskan lab investigates mechanisms and regulation of alternative translation events called recoding that alter the triplet periodicity of the genetic code in eukaryotic cells during infections. (Riegger and Caliskan, Frontiers M.Bio., 2022). Recoding events such as frameshifting have been well known and studied in viruses such as HIV, coronaviruses and bacteria since they are essential for the synthesis of replicative enzymes and hence for the life cycle of the pathogen. However, their regulation and mechanisms remain puzzling. The Caliskan lab aims to close this gap by combining interdisciplinary expertise from cellular to single-molecule analysis to identify, mechanistically study and frameshift processes of translating ribosomes (Zimmer and Kibe et al, Nature Comm. 2021, Hill, Pekarek et al., Nature Comm. 2021). Understanding the mechanisms of recoding and its cis- and trans-regulators will, in the long run, provide us with new tools for synthetic biology and new opportunities for RNA-centric antiviral drugs and immunotherapies.

Responsibilities

To work on this project, we seek a highly motivated Postdoctoral Researcher to study and illuminate regulation principles of programmed ribosome frameshifting events in HIV-1 by employing high-throughput RNA structural-functional profiling and single-molecule techniques *in vivo* and *in vitro*. In this regard, we are especially interested in hiring candidates with expertise in single-nucleotide and single-molecule analysis of RNA complexes (Pekarek et al., Nucleic Acid Research, 2023).

The project will be conducted in a highly international, collegial, collaborative, and interdisciplinary work environment, with various possibilities to develop independence, new skills and long-term career opportunities. We highly encourage and support the candidate to apply for external third-party funding.

Requirements

- Ph.D. or equivalent in biochemistry, molecular biology, biophysics or a related field of the life sciences or engineering.
- Solid understanding of RNA biology, ribosome and translation mechanisms
- Experience with R, Python or MatLab for high throughput data analysis
- Experience in next-generation sequencing (i.e. SHAPE-seq, CLIP-Seq, RNA-seq, Ribo-seq), as well as NGS library preparation, and in single molecule techniques optical tweezers and/or smFRET
- Strong written and spoken English language communication skills
- High motivation, problem solving and good organizational skills

Please send your application with your CV and motivation letter to neva.caliskan@ur.de