Hertie-Institut
für klinische Hirnforschung

PhD Position

in preclinical development of individualized antisense oligonucleotides (ASOs) for rare neurological diseases at the Hertie Institute for Clinical Brain Research

The Hertie Institute for Clinical Brain Research (HIH), together with the Department of Neurology, forms the Center for Neurology at the University of Tuebingen. It is dedicated to basic and translational research in neurological diseases. Together with the several other highly advanced neuroscience institutes, it is part of the TuebingenNeuroCampus (TNC), here working closely together also with the German Center for Neurodegenerative Diseases (DZNE) and being part of the Gene & RNA Therapy Center (GRTC). Scientists in the more than 100 active research groups of the TNC pursue theoretical, system-neuroscientific, molecular, and clinical research approaches in their entire breadth using a wide range of methods.

The research division „Translational Genomics of Neurodegenerative Diseases" of Prof. Synofzik is currently looking for a **PhD student for 3 years (extension possible) - position available immediately.**

About us

Our research division focuses on genomics, pathophysiology and translational biomarker research as well as treatment development in the field of neurodegenerative diseases, with a special focus on genetic ataxias, motor neuron diseases, and dementias. Prof. Synofzik is part of several European and transatlantic consortia on development of ASO therapies, in particular tailored to single patients (n-of-1 ASOs). A wide range of molecular, protein biochemical and cell biological methods are applied in the lab (e.g. exome/genome/RNAseq sequencing, qPCR, western blotting, ELISAs, and cutting-edge ultra-sensitive protein analysis, ASO development from bench to bedside and back).

The PhD Project

You will be integrated in several translational projects as the key person to develop and validate patient-specific, individualized antisense oligonucleotides (ASOs) for rare neurological diseases (by showcase of Ataxia Teleangiectasia, AT). You will design a large candidate battery of ASOs *in silico*, and test the efficacy and toxicity of the most promising candidate ASOs *in vitro* in patient-derived cell models. To facilitate the use of *in vivo* target engagement biomarkers for these ASOs, you will develop targeted protein assays aiming to detect restored ATM protein in patient's CSF *in vivo*, and – if successful- transfer these assays onto ultra-sensitive protein platforms (Simoa, Singulex). You will receive excellent training in cutting-edge molecular biology methods and assay development (including ASO/RNA therapy desing, Simoa, Singulex and Luminex technology, collaborate with the Gene & RNA Therapy Center (GRTC) and other biotechnology cores across the Tuebingen research campus, and work collaboratively with our team to report results at conferences and scientific journals.

Your background

- You have a Master's degree in Biochemistry, Biology, Molecular Genetics, Molecular Medicine or related life sciences.
- Experience with development/validation of methods in molecular biology, ideally (but not mandatory) with translational application of RNA therapies and/or immunoassays using fluid biospecimens.
- You should have good communication skills, attention to detail, and flexibility to work both independently and collaboratively.
- Very good proficiency in English (oral and written) is mandatory.
- The doctoral candidates we are looking for must not already be in possession of a doctoral degree. The candidate must not have resided or carried out their main activity (work, studies, etc.) in Germany for more than 12 months in the last 36 months.

We offer

We offer a challenging interdisciplinary translational project that is **integrated into the EU-funded Integrated Doctoral Network programme "Medicine Made to Measure" (MMM), supported by the European Union Horizon Marie Sklodowska-Curie Actions programme (MSCA)** (GA no. 101120256). **This will allow for excellent continuous training and mentoring modules, as well as mobility allowances across top-labs in Europe working on the same topic.** The PhD will also be in affiliation with the Graduate Training Center of Neuroscience Tübingen**.** Salary will be determined according to EU MSCA salary regulations. Appointment is full time and will be initially for up to three years (possibility of extension). We give priority to severely disabled applicants with essentially equal qualifications.

Application

If you are interested in this project, please send your full application within one PDF file including:

- Cover letter outlining (i) how you meet the requirements for the position, (ii) relevant details of your past research projects, and (iii) an explanation of how your previous experience lends itself to this PhD research project. (~750-1000 words).
- Curriculum vitae
- Names and email addresses of two professional references (e.g., current or previous research advisors).
- transcripts, your master's thesis and/or publications.

Please send this PDF to Selina Reich: selina.reich@uni-tuebingen.de,
Deadline: 15.02.2024

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