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 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.

**About us**

The research division „Translational Genomics of Neurodegenerative Diseases“ of Prof. Synofzik 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, Sanger sequencing, qPCR, western blotting, ELISAs, and cutting-edge ultra-sensitive protein analysis including Simoa, Luminex and Singulex technology as well as ASO development from bench to bedside and back).

**PhD project**

You will be integrated in several translational projects to develop and validate patient-specific, individualized antisense oligonucleotides (ASOs) for rare neurological diseases (by showcase of Ataxia Teleangiectasia, AT). Your task will be to 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 ultra-sensitive transcript assays aiming to detect restored ATM transcripts in patient's CSF in vivo (e.g. digital PCR). You will receive an excellent training in cutting-edge molecular biology methods and assay development (including ASO design, RNA therapy design, dPCR, Simoa, Singulex and Luminex technology, which are all directly available and established on site), 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 the results and progress at conferences and scientific journals.

This position will be part of an **Integrated Doctoral Network programme "Medicine Made to Measure" (MMM) supported by the European Union Horizon Marie Sklodowska-Curie Actions programme (MSCA)**, GA no. 101120256.

**What we are looking for**

- You have a Master's degree in Biochemistry, Biology, Molecular Genetics, Molecular Medicine or related life sciences
- At least one of the following criteria must be fulfilled:
  a) strong experience in standard molecular biology methods, especially in cell culture (e.g., primary fibroblasts), SDS-PAGE and Western blot, qPCR and RT-PCR, DNA/RNA isolation
  b) strong experience with translational development of RNA therapies (e.g., antisense oligonucleotides, ASOs) and/or transcript assays using fluid biospecimens
- Familiar with bioinformatics tools or data analysis software is a plus
- Strong communication skills, attention to detail, and the ability to work both independently and collaboratively
- Very good proficiency in English (both spoken and written) is required
- Candidates must not already hold a doctoral degree at the time of recruitment. Additionally, the candidate must not have resided or carried out their main activity (work, studies, etc.) in Germany for more than 12 months within the 36 months immediately prior recruitment

**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 the PDF to Anja Heider: anja.heider@medizin.uni-tuebingen.de
**Deadline: 10.06.2026**

**Matthis Synofzik**
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