Doctoral position
ENTRY-DM: MSCA Doctoral network
Interdisciplinary doctoral training on oligonucleotide-based therapies for myotonic dystrophy

One PhD position is available from September 2025 at the Friedrich-Baur-Institute, Department of Neurology, Ludwig-Maximilians-University, Munich, Germany. The project is funded by a MSCA Doctoral network.

NETWORK DESCRIPTION: ENTRY-DM is an interdisciplinary training and research programme focused on RNA-based therapeutics for myotonic dystrophy (DM). It offers 14 fully funded positions across top European institutions, integrating fundamental science, translational medicine, and clinical applications. The network integrates academic leaders, biotech experts, and patient advocates to develop disease models, optimize antisense oligonucleotide (ASO) therapies, and identify clinical biomarkers. Doctoral candidates will receive advanced training in genomics, bioinformatics, stem cell research, bioengineering, and neuropsychology. With host institutions in France, Spain, Italy, the Netherlands, Germany, and Poland, ENTRY-DM provides exceptional mobility, cross-sector training, and world-class supervision. It will equip doctoral candidates with the expertise to drive future breakthroughs in RNA therapeutics for rare disease treatment.

PROJECT DESCRIPTION: Myotonic Dystrophy Type 2 (DM2): Biomarker discovery and correlation to clinical outcomes
In this project, the doctoral candidate (DC) will apply state-of-the-art transcriptomic and proteomic and complementary validation techniques (immunohistochemistry, RNAseq) in the context of myotonic dystrophy type 2 (DM2). The proteomic biomarker discovery will be performed in a German DM2 cohort. The DC will use serum samples obtained from 20 DM2 patients, which will be used as a discovery cohort. Ten non-disease controls will be included in the analysis. After in silico analysis and identification of possible biomarker candidates, the proteomic findings will be validated in serum of a separate cohort of DM2 patients. Validation includes targeted proteomics in serum samples, needle biopsy sampling of selected cases, and transcriptomic profiling (RNAseq) of muscle tissue samples. Next, a correlation of biomarker candidates and clinical outcomes will be performed. These include established motor outcomes (manual muscle testing, 10 m walk test, vHOT testing for myotonia, as well as patient-reported outcomes (fatigue and daytime sleepiness scale (FDSS), and DM1-Active-c. Biomarker profiles will also be correlated to the multisystemic nature of the disease by laboratory parameters (e.g. creatine kinase, proBNP, glucose profiles), cardiac abnormalities, and e.g. cataracts.
Supervisors: Prof. Dr. Benedikt Schoser (📧 benedikt.schoser@med.uni-muenchen.de); **PD Dr. Peter Meinke**(📧 peter.meinke@med.uni-muenchen.de)

CANDIDATES PROFILE: We are looking for a highly motivated and ambitious doctoral candidate with a medical and/or molecular and cellular biology background. A strong interest in neuromuscular disorders and biomarker discovery is essential. Applicants must hold either a medical doctor's license or a MSc (or equivalent) in Molecular Life Sciences, Biology, or Biomedical Sciences. Hands-on experience with key molecular biology techniques, such as PCR, RT-PCR, and cell culture, is required. The ideal candidate should demonstrate strong analytical and problem-solving abilities, a high level of scientific curiosity, and a dedication to advancing therapeutic research. Excellent communication and teamwork skills are necessary for effective collaboration within a multidisciplinary and international research environment. Proficiency in English is mandatory, and basic knowledge of German is highly recommended to enhance institutional and social interactions as a medical doctor.

Starting Date: September 2025
Application deadline: 30 May 2025

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