

## Post-doctoral scientist (m,w,d)

Institute for Experimental Pediatric Endocrinology  
Charité-Universitätsmedizin Berlin  
Augustenburger Platz 1  
13353 Berlin

### Brief description of field of application

A postdoctoral position is available starting 01.02.2021 at the Institute for Experimental Pediatric Endocrinology at the Charité Universitätsmedizin Berlin (AG Kühnen). This position is associated to the DFG Transregio CRC/TR 296 "local control of TH action" (homepage: [www.uni-due.de/crctr296/](http://www.uni-due.de/crctr296/)).

The primary focus of our group's research is on rare endocrine diseases. Special topics include thyroid hormone regulation of human brain development and epigenetic mechanisms of the central regulation of body weight. To analyze the impact of genetic and epigenetic variants on hormonally-regulated molecular pathways, our group's translational research prioritizes human experimental models based on human embryonic stem cells (hESC) and human induced pluripotent stem cells (hiPSC).

### Your area of responsibility

The candidate will work in project P04 of the DFG Transregio CRC/TR 296. This project specifically aims at characterizing the consequences of perturbed local thyroid hormone (TH) signaling for human brain development. This problem will be addressed by analyzing neuronal development in three-dimensional cerebral organoid models derived from different hiPSC lines (healthy, patient-derived and gene-edited hiPSC). The candidate will be expected to map spatiotemporal expression profiles of genes involved in local TH action, characterize effects of varying TH levels on neuronal differentiation and cortex-like cytoarchitecture, examine neurodevelopmental phenotypes caused by mutant TH transporters and TH receptors and generate novel hiPSC models by gene-editing.

Core techniques relevant to the project include:

- 2D hESC neuronal cultures and hiPSC-derived brain organoids
- CRISPR/Cas9 gene editing
- Immunofluorescence staining and single molecule fluorescent in situ hybridization (RNAscope)
- Single cell RNA sequencing (scRNA-seq)

Additional epigenomic techniques relevant for this project will include Chromatin Immunoprecipitation Sequencing (ChIP-seq), Assays for Transposase-Accessible Chromatin (ATAC-seq) and methylome analyses by pyrosequencing and post-bisulfite adapter tagging (PBAT)

### Your profile

- We are looking for an enthusiastic, talented and motivated post-doctoral scientist with a positive mindset.
- Candidates with experimental experience in neurodevelopmental research and a strong interest in working with stem cell-based models are encouraged to apply.
- Candidates should hold a PhD degree in cell/molecular/developmental/stem cell biology or similar, with a track-record of successful scientific work.
- Previous experience in analyzing neuronal tissue by means of multidimensional microscopy, advanced image analysis and single cell RNA sequencing are considered an advantage.
- Enhanced skills in bioinformatics (single cell data analyses) are highly appreciated.
- The ability to work in a highly collaborative environment both independently and as part of a team is essential.

- The candidate should also have the motivation to participate in the training and supervision of young scientists (e.g. doctoral students) in addition to the scientific work.
- Excellent English communication skills, both oral and written, are required for a successful candidate.

**Contact:**

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