

- PhD position -

Functional characterization, pharmacological modulation and clinical correlation of rare CFTR mutations in human epithelia

A PhD position is open in the Junior Research Group “Precision Medicine in Cystic Fibrosis” at the Department of Pediatric Respiratory Medicine, Immunology and Critical Care Medicine, Charité - Universitätsmedizin Berlin.

The group’s focus is the investigation of the disease mechanisms and the development of new therapeutic strategies for cystic fibrosis (CF) and other chronic lung diseases. We offer an open, supportive, dynamic and motivating academic environment with excellent training opportunities, interdisciplinary collaboration in translational lung research, as well as support in professional qualification with the aim of obtaining a doctorate.

The Charité - Universitätsmedizin Berlin is a joint institution of Freie Universität Berlin and Humboldt - Universität zu Berlin. As one of the largest university hospitals in Europe, it plays a leading role in research, teaching and patient care.

The project

Cystic fibrosis is the most common lethal genetic disease in Caucasian Population and is caused by mutations in the cystic fibrosis transmembrane conductance regulator (CFTR) gene that encodes for a chloride ion channel. Impaired function of the chloride ion channel leads to impaired mucus transport in the lung and other organs, and consequently to a failure to thrive and chronic lung disease.

We are seeking a highly motivated and committed doctoral candidate for a research project that aims to characterize the function of different classes of rare CFTR mutations in human native respiratory and intestinal epithelia, by using sweat test, intestinal current measurement and nasal potential difference. The project aims to correlate the genotype and CFTR function with the clinical phenotype and to perform *in vitro* testing of currently developed and approved CFTR modulators in patient derived nasal epithelial cells.

- Methods include sweat test, nasal potential difference measurement, intestinal current measurement, primary cell culture models, electrophysiological measurements (Ussing chamber) and Western blot.
- The candidate will present their research results at national and international conferences and contribute to manuscript and grant writing.
- We offer enrollment into a structured PhD curriculum, provided by Charité and integrated in the Berlin University Alliance.

Your profile

- You hold an excellent master's degree or equivalent in the fields of medicine, biology, biochemistry, biotechnology or related areas.
- High proficiency in written and spoken English is a prerequisite.
- A strong interest in respiratory physiology and in learning the mechanisms underlying lung disease.
- Experience in cell culture, especially previous work with human primary cell culture models is an advantage.
- Experience in electrophysiological measurements including Ussing chamber is an advantage.
- You have knowledge in molecular biology, cell biology, and in transcriptional and epigenetic regulation.
- Experience in fluorescence microscopy including confocal microscopy and image analysis is an advantage.

We are looking forward to your application, which should contain the following documents:

- Letter of motivation (1 page), indicating prior research experiences and future goals
- CV (including list of publications if applicable)
- Copies of your bachelor and master or diploma degree (including transcript of records)
- At least two support letters

Applications should be addressed to Dr. Simon Gräber and sent via email to paed-pneu-forschung@charite.de until 15/12/2022 latest. Please send all documents in a single PDF file and refer to the identifier So.134.22 in the email.