

## **PhD student in Biophysics/Pharmaceutical Chemistry**

The position is part of the Innovative Training Network (ITN) "PROTON". The network is devoted to the investigation of proton transport and proton-coupled transport. It is funded under Marie Skłodowska-Curie actions (H2020-MSCA-ITN-2019, grant agreement number: 860592).

PROTON website: <https://www.jku.at/institut-fuer-biophysik/forschung/forschungsprojekte/proton/>

### **Job Description**

The successful applicant will investigate proton-dependent transport proteins of human origin or from human-pathogenic parasites (e.g. malaria) and evaluate their potential as novel drug targets. Transporters are massively underexplored not only in terms of structure-function relationships but also in a therapeutic sense. The scope of this research project is to understand the substrate selectivity properties, transport mechanisms, and druggability of proton-dependent metabolite transporters.

The researcher will produce transport proteins in cell-based and cell-free systems, assay their functionality using radiolabeled substrates, fluorescent dyes, or light scattering methods. The transport assays will be done in whole cells or with reconstituted proteoliposomes. Selected point mutations will be introduced into the transporter to alter substrate selectivity and transport properties. Large-scale expression and solubilisation by detergents or using the nanodisc technique will facilitate work towards structure elucidation by electron microscopy. Access to drug-like small-molecule libraries and collaboration with medicinal chemists will enable discovery of inhibitors/modulators by phenotypic or biophysical screening assays.

### **The PhD student will have two secondments (3 and 6 months):**

- Johannes-Kepler University Linz, Austria, Lab of Peter Pohl; advanced spectroscopic techniques
- Intana Bioscience GmbH, Planegg Martinsried, Germany; inhibitor/protein binding kinetics using fluorescence correlation spectroscopy (FCS)

### **Finances**

We are offering a fulltime position for three years. The gross salary amounts to about € 38000 per year (corresponds to roughly € 1900 per month after taxes and social security). A monthly mobility allowance and - if applicable - a family allowance will be paid in addition.

The earliest starting date is the 1. October 2019.

### **Required Qualifications**

1. Applicants must, at the date of recruitment by PROTON, be in the first four years (full-time equivalent research experience measured from the date when the researcher obtained the degree entitling him/her to embark on a doctorate) of their research careers

**Beitz lab:** <https://www.pharmazie.uni-kiel.de/en/pharmceitica/prof-dr-eric-beitz>

2. They should not have been awarded a doctoral degree.
3. Applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting institution for more than 12 months in the 3 years immediately before the recruitment date. This excludes short stays such as holidays or compulsory national service.
4. We look for students with exceptional academic performance holding or very close to completing their Master degree or final state examination in Pharmaceutical Sciences, Biophysics, Biochemistry or closely related subjects,
5. Knowledge of the English language is essential.

### **Additional Qualifications**

1. Protein production, protein purification and reconstitution, detergents, protein analytics
2. Knowledge of drug-likeness of small-molecules, experience in small-molecule analytics (NMR, MS, IR)
3. Experience in cell culture techniques (*E. coli*, yeast)
4. Publications in international journals/attendance of international conferences in the following fields: pharmaceutical sciences, biochemistry, biophysics
5. Site directed mutagenesis, protein structure modelling
6. Ability to apply software for scientific data evaluation and display
7. Soft skills: presentation skill, team working ability

For all of the above, knowledge is proven by publications, certificates, master thesis or equivalent documentation. Skills should be acknowledged in reference letters and demonstrated during the interview (presentation skills). During the interview each applicant presents his/her master thesis (or other study-related research project) and a scientific paper from an area unrelated to his/her specialization (chosen by the interviewers).

**Women are encouraged to apply.** The recruitment committee gives preference to female candidates if they are equally qualified as male candidates.

### **Documents Required:**

1. Motivation letter
2. Reference letters
3. Curriculum Vitae
4. Copies of Bachelor and Master (or state examination) certificates
5. Publications (if available).

**Address for applications: [ebeitz@pharmazie.uni-kiel.de](mailto:ebeitz@pharmazie.uni-kiel.de)**

**Beitz lab: <https://www.pharmazie.uni-kiel.de/en/pharmceitica/prof-dr-eric-beitz>**