

PhD position in Integrative Membrane Structural Biology in the Hunte laboratory

Sodium/proton exchangers (NHEs) are integral membrane proteins with crucial roles in control of cell and tissue pH. NHEs exchange sodium ions against protons across cellular membranes in a highly regulated manner and are key players in essential physiological processes such as growth, proliferation and differentiation of cells. Their dysfunction is linked to a broad range of pathophysiological conditions including cardiac and neurological diseases as well as cancer, and they serve as drug targets. Yet, the molecular mechanisms and underlying structure-function relationships are rarely understood. The project aims to elucidate structural and functional determinants of regulated ion translocation by NHEs. We will address fundamental open questions with a broad spectrum of genetic, biochemical and biophysical methods including X-ray crystallography and cryo electron microscopy. Focus will be on mammalian NHE1 and its regulation by calcineurin B homologous proteins (CHPs). Previous work of the group includes structure determination of NhaA (Hunte et al. Nature 2005), a bacterial homolog, and characterization of the interaction between CHPs and NHE1 (Fuchs et al. Sci. Rep. 2018, Liang et al. FASEB J. 2020).

We are offering a dedicated research environment with state of the art equipment for membrane protein research. The group is member of the excellence cluster CIBSS – Centre for Integrative Biological Signalling studies (<https://www.cibss.uni-freiburg.de>). We are seeking highly motivated and qualified individuals with a keen interest in molecular biomedical research. Candidates should hold a university degree (Master or equivalent) in biochemistry, chemistry, biology or a related topic. The position is available from September 2020 until filled.

For further information, please contact Carola Hunte (Email: carola.hunte@biochemie.uni-freiburg.de). The position is associated with the Research Training Group (RTG) 2202 “Transport across and into membranes”, a three-year structured PhD program at the University of Freiburg (www.taim.uni-freiburg.de). Applications should be directed to the RTG (rtg2202@bio.chemie.uni-freiburg.de) and Carola Hunte (carola.hunte@biochemie.uni-freiburg.de) Prof. Dr. Carola Hunte.

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