

The Department of Anatomy and Cell Biology, University of Würzburg (<https://www.anatomie.uni-wuerzburg.de/startseite/>) is currently seeking two highly motivated

PhD students (m/f/d) to study the molecular mechanisms of blood-brain barrier formation and maintenance

Brain endothelium is characterized by the blood-brain barrier (BBB), which protects sensitive neurons from harmful, blood-born substances. Yet, the BBB also prevents extravasation of many drugs into the brain parenchyma thereby inhibiting their action in the brain. In recent years the adhesion G protein-coupled receptor GPR124 and the GPI-anchored protein RECK have emerged as critical regulators of Wnt7 signaling in brain endothelium, which mediates BBB formation and maintenance. We previously demonstrated that GPR124 and RECK form a Wnt7-specific co-receptor complex on brain vascular cells that promotes Wnt7 binding to classical Wnt receptors of the Frizzled and LRP families (Vallon et al, Cell Rep, 2018).

We use molecular and cell biological approaches as well as protein biochemistry and mouse genetics to further elucidate the molecular mechanisms of GPR124/RECK/Wnt7 signaling. Gaining a better understanding of this signaling pathway will form the basis for the development of drugs that mitigate BBB breakdown in brain disorders such as ischemic stroke or that can be used to transiently open the BBB enabling, for example, more efficient chemotherapy of brain tumors.

Applicants for the open positions must hold a Master's degree or equivalent in natural or life sciences and should have a solid background in molecular biology and protein biochemistry. We are looking for team players with excellent communication and organization skills and a good command of the English language. The positions are funded by the DFG and limited for 3 years with the possibility of extension. Positions can be filled immediately and will be compensated according to TV-L E13 (65%). Hired graduate students will have the option to become associate members of the Adhesion GPCR Consortium (<https://www.adhesiongpcr.org/>) and present their data at the biennially held Adhesion GPCR Workshop.

Applications containing a motivation letter, curriculum vitae, certificates, and information on previous research experience should be sent as one PDF file to Dr. Mario Vallon (mario.vallon@uni-wuerzburg.de).

Funded by