

Biosketch Simon Hebeisen

Ion channel research is my passion. I am studying them using the patch-clamp technique since more than 15 years. Beside their gating properties, I am very interested in structure function relationships with a strong focus on pharmacology. To answer these questions, I need a strong background in biophysics, physiology and molecular biology.

During my studies in Biology and Chemistry for becoming a high school teacher at the universities of Marburg and Karlsruhe, I heard about ion channels and their important physiological roles for the first time. To enhance my knowledge in electrophysiology and to learn more about molecular biology and protein biochemistry, I continued to study ion channels during my PhD at the RWTH Aachen in the lab of Christoph Fahlke. After a one year post doc in the same lab, I moved to the natural and medical science institute at the University of Tübingen as a lab manager. In 2006 I joined the contract research organization B'SYS, which is specialized in ion channel research as head electrophysiologist. Two years later I was promoted to the Chief Scientific Officer.

I started with patch-clamping as a master student analyzing the redox regulation of an unspecific cation channel from the yeast tonoplast. For these studies single channel recordings were used to determine the open probability in the presence of increasing concentrations of reducing or oxidizing agents. For my PhD, I changed from cation to anion channels. I studied the function and the influence of the long cytoplasmatic C-terminus on the gating of the muscle chloride channel ClC-1. Since the structure of this part of the channel was not known yet, many mutations and truncations of the C-terminus were characterized to identify interactions within the C-terminus and between the C-terminus and the pore forming part of the channel protein. As a postdoc, I analyzed interactions of a kidney ClC channel isoform and its  $\beta$ -subunit Barttin. Moving from academia to pharmaceutical industry changed my scientific focus to pharmacologically relevant ion channels. During the last ten years I and my team established more than 60 ion channel assays for voltage and ligand gated ion channels of the central nervous system. To be able to offer studies for preclinical cardiac safety too, we are currently optimizing assays for all important cardiac ion channels (CiPA initiative) for manual and automated patch-clamping.