



MSc Thesis in Molecular Biology and Biochemistry

Pathophysiology and regulation of ion channels in the lung

We are looking for a motivated **MSc Student** to join our two laboratories of **Translational Research on Membrane Proteins in the Lung** (Experimental Anesthesiology and Ludwig Boltzmann Institute for Lung Vascular Research) and **Computer-Aided Molecular Design** (Division of Medicinal Chemistry, Otto-Loewi Research Center) at the Medical University of Graz.

Background: The members of the potassium channels family regulate the membrane potential our body depending on their activity. A variety of genetic and acquired potassium channel defects (channelopathies) have been described during the last decades. Accordingly, they represent targets for a plethora of highly versatile and important drugs. In the present investigation, we are interested in how specific voltage-gated potassium channels are regulated, and if protein effectors can exert this regulation.

Goal: The aim of the current project is to extend our previous findings and to design and deliver specific protein effectors of voltage-gated potassium channels (Kv) which are essential in lung diseases. The MSc Student will focus on cloning and expression of the wild-type protein Kv variants of in bacteria, yeast or insect cells, their purification using chromatographic methods, and their *in vitro* characterization by chromatographic and biochemical methods.

Timing and facilities: The estimated time scale for the practical work of this MSc project is 6 months. Our two labs harbor all tools needed for molecular cloning and protein expression and facilities for protein purification and characterization. The MSc Student will be fully supported by our teams.

Questions?

Feel free to visit CAMDgraz.com or to send an Email to: pedro.murcia@medunigraz.at or andrea.olschewski@medunigraz.at.