



The Unit of Physiology and Biophysics (Department of Biomedical Sciences) is doing research with a main focus on Membrane Biophysics and Mitochondrial Metabolism. To strengthen our team we are looking for

Master and Bachelor students

Preferentially, you study Molecular Biology, Biochemistry or Veterinary medicine, or you come from a related field. You have a strong interest in investigating metabolism and mitochondria.

During your thesis you will work with tissue samples from mice which were kept under different nutritional states (ketosis, caloric restriction, intermittent fasting) or *in vitro* cultures of CRISP-PITCh modified cell lines.

Depending on your research interest you can choose from a variety of techniques to address the respective research question:

- **The isolation of protein and mRNA from murine tissue samples**
- **The analysis of gene and protein expression of mitochondrial and metabolic proteins in different tissues**
- **Immunohistochemical staining of tissue samples**
- **Morphological evaluation of tissue samples (IHC and 2D-TEM ultrastructure)**
- **Experiments with a genetically modified cell line (single cell clones, fluorescence microscopy, metabolic assays)**

Furthermore, you will have the chance to participate in collaborative projects.

Contact persons:

Univ.-Prof. Dr.med. Elena E. Pohl (elena.pohl@vetmeduni.ac.at)

Dr. Felix Locker (felix.locker@vetmeduni.ac.at)

<http://www.vetmeduni.ac.at/biophysik>

For an introduction to the topic please see our publications:

- 1) Locker F. (2020) The influence of ketogenic diets on psoriasiform-like skin inflammation
- 2) Rupprecht et al. (2014) Uncoupling protein 2 and 4 expression pattern during stem cell differentiation provides new insight into their putative function. PLoS One. 2014; 9(2)
- 3) Hilse et al. (2018) The expression of uncoupling protein 3 coincides with the fatty acid oxidation type of metabolism in adult murine heart. Front. Physiol.
- 4) Smorodchenko, A. et al. (2009). Comparative analysis of uncoupling protein 4 distribution in various tissues under physiological conditions and during development. Biochim. Biophys. Acta 1788, 2309-2319.