Bachelor's thesis at the Department of Neurology

Aim: Characterizing an *in vitro* cell model of potentially genetic small fiber neuropathy

Background: Small fiber neuropathy (SFN) effects the thinly-myelinated A-delta and non-myelinated C-nerve fibers and leads to acral burning pain. Some SFN patients show genetic variants in pain-associated ion channels hinting at a hereditary etiology. However, pathogenicity of genetic variants often remains unclear. We have generated induced pluripotent stem cells (iPSC) of a patient carrying a genetic variant in a pain-associated gene (transient receptor potential cation channel subfamily A, TRPA1). We aim to differentiate these iPSC into peripheral nociceptors for further characterization and analysis.

Tasks:

- Cultivation of iPSC and differentiation to sensory neurons
- Characterization of sensory neurons using immunocytochemistry and qRT-PCR
- Analysis of intra-neuronal calcium levels

Techniques: Cell culture, immunocytochemistry, fluorescence microscopy, qRT-PCR, microplate reader assays

Requirements: We are looking for a student of Life Sciences or related faculty, preferably with cell culture experience, who is motivated to engage themself in this project and to become part of our enthusiastic research team!

Start and duration: From now on for 3 months.

Team of supervisors: Prof. Dr. N. Üçeyler, Dr. Franziska Karl-Schöller (karl_f@ukw.de), Nicole Schottmann, M.Sc. (schottmann_n@ukw.de)
Please contact Franziska Karl-Schöller or Nicole Schottmann if you have any questions about the project.

Contact: Application documents (CV and motivation letter) to Prof. Dr. N. Üçeyler: ueceyler_n@ukw.de