

Master's thesis at the Department of Neurology

Aim: Characterization of interactions between keratinocytes from neurofibromatosis (NF) patients

Background: Neurofibromatosis (NF) 1 and NF2 are genetic disorders caused by mutations in the *NF1* gene encoding for neurofibromin and in the *NF2* gene encoding for merlin, respectively. Mutations in these genes lead to the formation of multiple tumors originating from the Schwann cells of peripheral nerves. Besides Schwann cells, neurofibromin and merlin are expressed in other cell types including keratinocytes. A previous study showed altered calcium-mediated signaling between cells in keratinocytes from NF1 patients. We already generated cultures of keratinocytes from skin punch biopsies of NF patients and healthy controls. Now, we aim at characterizing these keratinocytes with the main focus on cell-cell interactions and communication.

Tasks:

- Cultivation of keratinocytes derived from NF patients and healthy controls
- Investigation of selected target gene expression via qRT-PCR
- Immunocytochemistry of relevant target proteins
- Calcium imaging
- Data analysis

Techniques: Cell culture, qRT-PCR, immunocytochemistry, calcium imaging

Requirements: We are looking for a student (m/f/d) of Life Sciences or related Faculty, who is motivated to engage himself/herself in this exciting project and to become part of our enthusiastic research team!

Start and duration: From October on for nine months.

Team of supervisors: Prof. Dr. Nurcan Üçeyler, Dr. Julia Grüner (gruener_j@ukw.de), Dr. Christoph Erbacher (erbacher_c@ukw.de). Please contact Dr. Julia Grüner or Dr. Christoph Erbacher if you have questions about the project.

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