Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

BIOZENTRUM

PhD position in Cancer Metabolism

Lipid synthesis is controlled by the SREBPs, a class of helix-loop-helix transcription factors. We have previously shown that SREBPs are activated downstream of the Akt/mTORC1 signalling axis, one of the most important oncogenic pathways in cancer. We have also shown that fatty acid biosynthesis and modification is essential for cancer cell growth and to prevent the activation of cellular stress response pathways that limit tumour expansion. While this work demonstrated the importance of SREBPs in cancer, the exact role of these transcription factors in cell transformation and tumour formation is only partially understood. In particular, it is not known to which extent SREBPs contributes to cell-cell communication in the tumour microenvironment and whether these factors have additional functions in stem-like cells that contribute to treatment resistance and cancer recurrence.

We are looking for a highly motivated individual with a strong interest in molecular biology and biochemistry to join our research on this DFG-funded project. A prerequisite for this position is a Master degree in a relevant subject area (Biochemistry, Biological Sciences, Biomedicine) and documented experience in tissue culture as well as general molecular biology techniques. Bioinformatics and biostatistics knowledge is of advantage. The laboratory has access to state-of-the-art research facilities (metabolomics, screening unit, next-generation sequencing) and offers a highly collaborative international working environment.

Applications including a CV, descriptions of previous research projects and the names of at least two referees should be sent by email to Prof. Dr. Almut Schulze (almut.schulze@uni-wuerzburg.de).

Selected references:

Schulze, A., and Harris, A.L. (2012). How cancer metabolism is tuned for proliferation and vulnerable to disruption. **Nature** *491*, 364-373.

Lewis, C.A., Brault, C., Peck, B., Bensaad, K., Griffiths, B., Mitter, R., Chakravarty, P., East, P., Dankworth, B., Alibhai, D.*, et al.* (2015). SREBP maintains lipid biosynthesis and viability of cancer cells under lipid- and oxygen-deprived conditions and defines a gene signature associated with poor survival in glioblastoma multiforme. **Oncogene** *34*, 5128-5140.

Schug, Z.T., Peck, B., Jones, D.T., Zhang, Q., Grosskurth, S., Alam, I.S., Goodwin, L.M., Smethurst, E., Mason, S., Blyth, K.*, et al.* (2015). Acetyl-CoA synthetase 2 promotes acetate utilization and maintains cancer cell growth under metabolic stress. **Cancer Cell** *27*, 57-71.

Rohrig, F., and Schulze, A. (2016). The multifaceted roles of fatty acid synthesis in cancer. **Nat Rev Cancer** *16*, 732-749.

Miess, H., Dankworth, B., Gouw, A.M., Rosenfeldt, M., Schmitz, W., Jiang, M., Saunders, B., Howell, M., Downward, J., Felsher, D.W.*, et al.* (2018). The glutathione redox system is essential to prevent ferroptosis caused by impaired lipid metabolism in clear cell renal cell carcinoma. **Oncogene** *40*, 5435-5450.