

**Masterarbeit zu vergeben/M. Sc. Position available on:****“Delineating the mechanisms of metabolic adaptation in brain cancer”**

We are looking for a highly motivated and self-driven student of Biology, Biochemistry or related disciplines with laboratory experience and skills for teamwork.

**The focus of our group is to elucidate how cancer cells adapt to metabolic stress.** Tumors are not developing in optimal conditions but under nutrient poor conditions, due to defective tumor vasculature and blood supply. Strikingly, some tumor cells are able to adapt to such stress conditions, which in turn leads to the emergence of highly aggressive cancers. The challenge is to understand how these tumor cells adapt in order to address the clinical need of better treating these cancers. It is therefore critical to identify the mechanisms supporting tumor adaptation to nutrient deprivation, as exemplified by our previous work “The eEF2 kinase confers resistance to nutrient deprivation by blocking translation elongation” published in Cell. This research has the potential to uncover novel therapeutic targets to specifically inhibit tumor development without affecting normal tissues.

**The aim of the project is to characterize a novel candidate protein supporting adaptation of brain cancer to nutrient deprivation.** The mechanisms allowing this candidate protein to promote brain tumor survival under such a stress will be investigated using various molecular tools already established in the laboratory. The function and relevance of the candidate protein will be characterized using the appropriate brain cancer cell models already available in our laboratory. We offer a wide range of molecular and cellular biology techniques (cell culture, Western blot, immunofluorescence, siRNA, shRNA and CRISPR, soft agar assays, ultra-low attachment assays, cell death assays, FACS, RNA isolation and qPCR, etc.).

The qualified candidate will work at the Institute of Neuropathology (Head: Prof. Reifenberger) under the supervision of Dr. rer. nat. Gabriel Leprivier who trained for 8 years in a world-renowned laboratory following his PhD graduation.

Bibliography: Lim JKM, ..., Leprivier G\*, Sorensen PH\*, PNAS, 2019; Leprivier G et al., Cell, 2013; Ng TL, Leprivier G et al., Cell Death and Diff 2012.

**Application (including CV and references) should be sent to:**

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