

**Masterarbeit zu vergeben/M. Sc. Position available on:****“Defining how cancer cells die under glucose deprivation”**

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 respond to glucose starvation.** While tumors are highly addicted to glucose, they are developing in glucose limiting conditions as a result of defective tumor vasculature and blood supply. This creates a cellular stress that primarily leads to cancer cell death, even though some rare cell clones will adapt and survive (as supported by our previous work “The eEF2 kinase confers resistance to nutrient deprivation by blocking translation elongation” published in *Cell*). Currently, it is not clear how cancer cells die under glucose deprivation. There is no consensus about the type of cell death induced by such a stress. Our data indicate that counterintuitively apoptosis is not triggered under glucose starvation. By understanding how cancer cells die under glucose limiting conditions, we hope to uncover novel therapeutic targets to treat cancer.

**The aim of the project is to define which type of cell death is induced by glucose deprivation in cancer cells.** This will be investigated using the appropriate brain cancer cell models already available in our laboratory. Various genetic and molecular tools, as well as cellular analyses, will be employed to characterize the type cell death. The mechanisms mediating such a cell death in response to glucose deprivation will also be determined. This may lead to the characterization of novel factors mediating cancer cell death.

We offer a wide range of molecular and cellular biology techniques (cell culture, siRNA, shRNA and CRISPR, cell death assays, Western blot, immunofluorescence, soft agar assays, ultra-low attachment 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:**

Gabriel Leprivier, PhD

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