Masterarbeit zu vergeben/M. Sc. Position available on:

"Harnessing glucose starvation-induced cell death to target glioblastoma cells"

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 and how this can be harnessed to design therapeutic strategies. While tumors are highly addicted to glucose, they are developing within glucose-limited conditions due to defective tumor vasculature and compromised blood supply. This creates a severe stress that primarily leads to cancer cell death, even though some rare cell clones can 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. Our preliminary data indicate that unexpectedly apoptosis is not the type of cell death triggered by glucose starvation in cancer cells. Understanding how cancer cells die under glucose-limited conditions will allow us to develop novel therapeutic approaches to treat cancer.

The aim of the project is to pharmacologically mimic glucose starvation to selectively kill glioblastoma cells. This will be investigated using various glioblastoma cell models that will be treated with different compounds interfering with glucose metabolism. Various genetic and molecular tools, as well as cellular analyses, will be employed to characterize the activity of such compounds. The mechanisms mediating selective cell death of glioblastoma cells will also be determined. This may lead to the characterization of novel compounds with potential therapeutic values to treat glioblastoma.

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 qRT-PCR, etc.).

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

Bibliography: Völtzke K,…, Leprivier G, *Cell Death and Discovery*, 2022; Hauffe L,…, Leprivier G, *Cell Death and Discovery*, 2022; Lim JKM,…, Leprivier G*, Sorensen PH*, *PNAS*, 2019; Leprivier G et al., *Cell*, 2013.

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

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