Master project (or internship) in Cancer Stem Cell Biology

The Hector Institute for Translational Brain Research (HITBR), department of the Central Institute of Mental Health (ZI) in Mannheim, is looking for a highly motivated master student for an internship and/or master project.

The HITBR exploits human induced pluripotent stem (iPS) cell technology to investigate the cellular and molecular bases of neurodevelopmental, psychiatric disorders and brain malignancies using 2d and 3d *in vitro* systems.

In the proposed project the candidate will generate and characterize tumor-like cell lines to compare them to patient-derived glioblastoma cell lines, in collaboration with the DKFZ (AG Winkler). The aim is to identify the potential founder cells of malignant tumors of the central nervous system (CNS). Cutting-edge gene editing methods will be used to generate knock-out / over expression cell lines targeting proto-oncogenes using different iPSC-derived cell types of the human CNS. Features of potentially tumorigenic cell lines will be tested including transplantation into cerebral organoids or cortical spheroids.

The ideal candidate will have some cell culture experience and a great interest in neurodevelopment and the molecular understanding of pathological pathways underlying transformation of CNS cells into malignant tumor entities. She or he will work with high-end iPSC cell culture techniques, as well as basic molecular biological methods for the characterization of the generated *in vitro* tumor lines involving immunofluorescence stainings and fluorescence microscopy as well as live cell imaging.

Due to our international research group, good English communication skills are a must.

Please, send a CV and statement of study background and interests to:
philipp.koch@zi-mannheim.de

Prof. Dr. med. Philipp Koch
Hector Institute for Translation Brain Research (HITBR)
Central Institute of Mental Health
University of Heidelberg
Square J5
68159 Mannheim
Germany

HITBR
Hector Institute for
Translational Brain Research

UNIVERSITÄT
HEIDELBERG
ZUKUNFT
SEIT 1386