

## Master thesis proposal

The research group Genetic Tumor Risk Syndromes at the National Center for Tumor Diseases (NCT) and the University Hospital Dresden is seeking for a highly motivated master student. The candidate will investigate the role of ZBTB48 in neuroblastoma cells.

ZBTB48 is an activating transcription factor and a negative regulator of telomere length in different cancer cells (PMID: 28500257, 28082411). Certain cancers, such as neuroblastomas, frequently lose one copy of ZBTB48, which is located at the end of chromosome 1 (1p36 deletion). In addition, there is a correlation between high ZBTB48 expression and a better survival in patients with neuroblastoma, which could indicate a tumor suppressor function of this gene in this tumor entity (PMID: 9516840). To better understand the role of ZBTB48 in neuroblastomas, we propose the introduction of ZBTB48 knock-out mutations via genome editing (CRISPR-Cas9) into four neuroblastoma cell lines and their subsequent characterization (Western Blot, FISH). This work will set the basis for further in-depth analyses of ZBTB48 knock-out vs. wildtype clones (RNA seq, proteome, telomere length, proliferation and migration).

### **Tasks/Responsibilities:**

- characterization of four cell lines (Western Blot, immunofluorescence)
- design and cloning of CRISPR constructs
- optimization of the transfection
- single cell sorting (FACS)
- validation of mutagenesis

### **Requirements:**

- highly motivated
- ability to communicate in English
- experience in basic molecular biology methods (PCR, Western blot) desirable
- experience in cell culture desirable

### **Start date:**

- as soon as possible with 4 weeks' notice

If you are interested, please send an e-mail with the title "Application master thesis" to [Arne.Jahn@uniklinikum-dresden.de](mailto:Arne.Jahn@uniklinikum-dresden.de).