

MASTER THESIS PROJECT:

Investigating the role of Glucocorticoid Receptor in Urothelial Bladder Cancer progression

Project outline

Sarcomatoid Urothelial Bladder Cancer (SARC) is a rare and aggressive mesenchymal-like histological subtype of bladder cancer, for which therapeutic options are limited and experimental models are lacking. Recent data generated in our laboratory (Garioni et al., 2023) have highlighted an increased expression of the Glucocorticoid Receptor (GR) in SARC as compared to conventional urothelial carcinoma (UroCa), suggesting that high GR expression represents a hallmark of SARC and of aggressive bladder cancer. In addition, overactivation of GR leads to (partial) reversion of the mesenchymal phenotype and to a less invasive phenotype in SARC cells, suggesting that the SARC phenotype is plastic and may be therapeutically modulated. Based on this background, this master project aims at better understanding the role of GR signaling in bladder cancer progression and the mechanisms linking the GR Pathway to Epithelial-to-Mesenchymal Transition. To address this question, the project will exploit 3D organoid models derived from UroCa and SARC patients (i.e. patient-derived organoids) and rely on functional experiments involving genetic and pharmacological perturbation of GR and subsequent molecular/phenotypic analyses (e.g. histology, immunofluorescence, invasion assays, scRNA-seq).

Research Group

Translational Genitourinary Cancer Research (TGCR) Laboratory, Department of Biomedicine, Institute of Pathology, Department of Urology

Group Leader: Dr. Clémentine Le Magnen

<https://biomedizin.unibas.ch/en/research/research-groups/le-magnen-lab/>

Your profile

We are looking for a motivated and curious individual with good English communication skills and strong interest in cellular biology and translational cancer research.

Application

To apply for the position send your application comprising an updated CV and short motivation statement to Michele Garioni (michele.garioni@usb.ch) and Dr. Clémentine Le Magnen (clementine.lemagnen@usb.ch)