The Research Lab of the Department of Urologie announce:

Master Thesis in Molecular Life Science / Molecular Medicine

BCL9 / BCL9L and Beta-Catenin Signaling Promote the Progression of Bladder Cancer.
How is this effect mediated?
Epithelial-Mesenchymal Transition, Cell Differentiation or Apoptosis

Project description:

BCL9L and the homologue BCL9 are cofactors in Wnt/beta-catenin signaling, that promotes tumor progression. We could show the oncogenic effect in various bladder cancer cell lines in-vitro (Kotolloshi et al. 2022). The analysis suggested the promotion of invasiveness and epithelial-mesenchymal transition by BCL9L in 2D cell culture and ex-vivo porcine bladder model. However, current experiments with an organoid model revealed a well-differentiated phenotype of parental bladder cancer cells compared with BCL9L knockdown. Moreover, we tested a new inhibitor against BCL9(L) in outlook to bladder cancer treatment. The inhibitor reduce significantly the invasiveness of bladder cancer cells and induce apoptosis at high concentration level. The aim of the master thesis will be the elucidation of the molecular mechanism of the tumor promoting effect of BCL9 and BCL9L and its inhibition: How the anti-tumor effect is mediated. Epithelial-Mesenchymal Transition, Cell Differentiation or Apoptosis?

Methods

- Various cell culture assays
- siRNA transfection and drug treatment
- qPCR
- Western blot
- Metalloproteinase activity Assay
- Apoptosis assay
- Immunofluorescence

About us:

Our Workgroup focus on molecular mechanisms and molecular markers of urothelial carcinoma of the bladder as well as other urinary cancers. You will find a friendly, family-like working group, which is networked with many other working groups at the UKJ. We are localized at the Research Center Lobeda and can rely on a wide range of research infrastructure.

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