Master Thesis Project: 1)

Gut microbiota as a modulator of tumor immunity

Changes in gut microbiota are associated with several diseases, including cancer. Tumor cells are known to carry altered cell-surface glycosylation that is associated with cancer progression. Mucin-degrading bacteria present in gut microbiota seems to define the efficacy of immune checkpoint inhibitors in cancer patients. Our preliminary data indicate a direct correlation between the presence of a commensal gut bacteria and the tumor growth modulation. The aim of this project is to define the role of a specific commensal mucin-degrading bacteria during tumorigenesis, particularly colon cancer. We will use cell culture, co-culture techniques, flow cytometry, real-type PCR and established in vivo models to define the glycan-based mechanisms leading to tumor growth control with immune-checkpoint inhibitor treatment.

Keywords: carcinoma mucins, glycosidases, immunomodulation,

Conditions: Seeking a motivated student with basic knowledge of microbiology, molecular biology and immunology. The project may include mouse models.

Supervisor: Prof. Dr. Lubor Borsig

Institute: Institute of Physiology

Contact: e-mail: lborsig@access.uzh.ch, Phone: 044 635 5134

Link: http://www.physiol.uzh.ch/en/research/institutegroups/grborsig.html