

PhD Seminar

**“Accessibilome of Human Cancer: Methods for Discovery of
Diagnostic and Therapeutic Biomarkers”**

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Abstract

Successful cancer therapy is and will greatly depend on our ability to unveil new targets that are specifically expressed in the tumor. A subset of such targets, which are reachable by systemic means, are called “accessible” and are particularly relevant for antibody-based cancer therapies. For the past decade we and others have been actively involved in developing new proteomics methods for the discovery of accessible tumor targets in human solid tumors. In particular in-situ chemical labelling of tumor biopsies and affinity purification of cell membrane and extracellular matrix proteins has been a key step in successfully mining systemically accessible biomarkers. We recently developed additional methods enabling the analysis of tumoral interstitial tissue fluid, which is a particularly rich and concentrated source of biomarkers. This notably circumvents the need to search for precious tumor biomarkers in the serum, where these molecules are extremely diluted and covered with significant molecular noise. Following the discovery of the new biomarkers their further development into diagnostic tests and treatment drugs depends on our ability to produce monoclonal antibodies and perform functional studies. In the present talk I will detail examples of our “favourite” targets and the process of their development into antibody-based cancer therapies.