

**Abstract:**

Antigen-specific T cells are an essential component of adaptive immunity. They are involved in protection of organism against extracellular and intracellular pathogens as well as against tumor cells. A defect of their function may lead to autoimmune disorders or allergies. That is why their detection and any further manipulation are essential for clinical immunology. In this thesis, I am going to describe two important methods which are useful for studies of antigen-specific T cells. It involves analysis of static snapshot using flow cytometry and kinetic single-cell detection in microwells. The information obtained by those compatible methods is potentially useful for medical practice in both prevention as well as diagnostics and therapy of relevant human pathologies.