ABSTRACT

NK cells are innate lymphocytes which constitute the first line of organism's defence against infections through their receptor system. These cells represent an important part of antiviral and antitumor immunity, they also play a role in transplant immunity, autoimmunity and reproduction. This diploma thesis inquires into the structure of the transmembrane receptor NKR-P1B of mouse NK cells and the interaction with its ligand Clr-b.

The aim was to prepare the expression vector coding the ligand-binding and whole extracellular region of the receptor NKR-P1B and to optimize its production and refolding *in vitro*. Purified protein samples were analyzed by size-exclusion chromatography, electrophoresis and mass spectrometry. Interaction between NKR-P1B and Clr-b proteins was tested using biophysical (size-exclusion chromatography and surface plasmon resonance) and biological methods (labelling of cellular sample with NKR-P1B proteins marked with fluorescent dye). *In vitro* binding experiments have not confirmed mutual interaction between NKR-P1B and Clr-b despite the prepared proteins binding to the bone marrow cells.