Abstract

NK cells, which are part of the innate immune system, are increasingly gaining attention, especially due to their cytotoxic ability to kill tumor cells of certain lines and certain viral, bacterial or parasitic infestation of the body. They lay a role in organ transplantation, the fight against HIV and other autoimmune diseases. NK cells have been studied since the 70th of the 20th century, but the structures and physiological ligands of their receptors remain only partially understood, as does the exact role of these cells in the organism. They communicate with others through their receptors, that recognize the lack of expression of MHC class I glycoproteins on the surface of target cells, thereby preventing cell recognition by cytotoxic lymphocytes.

This diploma thesis deals with the research of receptors from cattle *(Bos taurus)*, which is not a traditional laboratory animal and my task was to contribute to research of the structure of this group of proteins. I dealt with the recombinant production of some of the most important representatives of NK receptors CD69, NKRP1 and NKG2D in bacterial cells.

The findings published in this thesis are a continuation of my bachelor thesis and together can be beneficial for further research into structural proteins and thus may help as in veterinary medicine in the future.