DESCRIPTION FOR THE GENERAL PUBLIC

A parasite employs many strategies, which can protect then against immunological system attack of the host. One of them is production of proteins modulating immunological response of organism, where they live. Parasite is tolerated, additionally immunological balance of the host is kept. As per hygienic hypothesis better life conditions, especially in west countries influence to higher count of cases of allergies and autoimmunological disorders. Reason of that can be low contact with pathogens, especially with parasites. Traditional methods of autoimmunological diseases treatment are ineffective, thus new alternative therapies are still searching. One of promising method of inflammatory bowel diseases is helminth therapy. To date first clinical trials have been obtained, however mechanism of the phenomenon is still unknown.

Dendritic cells (DC) are compound of immunological system, which play crucial role in pathogens recognition and cytokines and surface molecules, substances which take a part in appropriate defensive response develop, among others with lymphocytes T investment. As much as is known about DC action during nematode infection, there is still lack of influence of parasite sex on this group of cells activity. Stimulation of cells with separated genders of parasite can be different as a result of differences in male and female immunogenicity.

The aim of the study is influence of gender of larvae L4 of intestinal nematode *Heligmosomoides polygyrus* for activity and phenotype of dendritic cells modification. During studies evaluation of expression of Toll like receptors genes will be conducted. Level of the receptors presented on surface of cells will be evaluated with flow cytometry. Identification of MAPKs: JNK, p38, ERK1/2 and Nf-κB will be conducted with Western-blot technique. Changes in proteome of JAWSII line cells inducted by larvae L4 of parasite will be determined by two dimensional gel electrophoresis of proteins in combination with spectrometry mass analysis. For in vitro T cells activity induced by cells evaluation, proliferation and cytokines production level will be measured. To determinate tolerogenic activity of these cells, adaptive transfer of stimulated with the nematodes to mice with colitis will be carried out.

Ability of parasites to regulation of immunological response of the host is employed in civilization disorders helminth therapy such as autoimmunological diseases and allergies. Conduction of proposed investigations will help to extend knowledge about immunoregulation parasite facility with gender division. Understanding of these mechanisms is necessary for effective using parasites, as well as substances produced by them, in autoimmunological diseases therapy.