Abstract

The neuropathogenic trematode *Trichobilharzia regenti* (Schistosomatidae) infects the central nervous system of birds and mammals. During its migration through the spinal cord, the parasite causes tissue damage and triggers inflammation which is likely responsible for the elimination of the parasite. In this thesis, the proinflammatory cytokines IL-1β and IL-17 were detected by immunohistochemistry in the affected spinal cord of C57BL/6J mice during the infection. Additionally, IL-4 and IL-6, participating in the regulation of the inflammation and tissue repair, respectively, were noticed. Astrocytes, microglia and other, yet unidentified cells, produced these cytokines. Furthermore, splenic T-lymphocytes were phenotyped by flow cytometry to characterize peripheral immune response. At the peak of nervous tissue inflammation, mixed (Th1/Th2) cellular immune response was observed. Taken together, this thesis extended the knowledge of cytokine immune response of mice infected with *T. regenti* and also confirmed that inflammation in the nervous tissue influences the polarization of peripheral immune response.

Key words: cytokines, spleen, CNS, microglia, astrocytes, *Trichobilharzia regenti*, immunohistochemistry, flow cytometry