

*Trichobilharzia regenti* belongs to a small group of parasitic helminthes localized in nervous tissue of their hosts. Like in other bird schistosomes, repeated penetration of larvae (cercariae) into the skin lead to development of skin allergic reaction in humans (cercarial dermatitis). Soon after the penetration in the skin, cercariae transform to schistosomula which are able to resist the host response and, in case of *T. regenti*, migrate to central nervous system (CNS). During CNS involvement, the infections of both specific avian and non-specific mammalian hosts can result in neuromotor disorders and even death of the host.

The present PhD thesis deals with *T. regenti* infections of non-specific mammalian host. The first part of the experimental work was focused on antibody reactivity and antigen specificity of sera from mice experimentally infected with *T. regenti*. Development of antigen-specific IgM and IgG1 antibodies and elevated levels of total serum IgE indicated a Th2 immune response. Cercarial antigens stimulated IL-4 release from basophiles obtained from healthy volunteers. Western blot analysis revealed that IgG and IgE antibodies in the sera specifically recognized antigen of 34 kDa in both homogenate of cercariae and cercarial excretory/secretory products. This molecule seems to represent major immunogen responsible for development of Th2 response.

The second part of the experiments dealt with the pathogenesis of experimental neuroinfection of mice. Histological observation showed that schistosomula migration caused damage of neurons. Presence of the parasite in CNS initiated an infiltration of the exposure sites by immune cells (CD3 lymphocytes, macrophages) and activation of microglia and astrocytes. Reaction of antibody against oligodendrocytes and neurofilaments with contents of schistosomula intestines showed for the first time that migrating schistosomula used nervous tissue as a source of nutrition.

The third part described the most antigenic structures of intravertebrate stages of *T. regenti*. Immunohistochemistry revealed the antibody targets in glycocalyx and glands of cercariae, and tegument of schistosomula and adults. Similar results for schistosomula developed in specific or non-specific hosts and *in vitro* showed that the ability of *T. regenti* to decrease the surface immunoreactivity during ontogenesis is independent on the host type.