Abstract

The main topic studied in this diploma thesis was the immune response of mice in the context of the protective effect on Leishmania infection outcomes. This kind of protection is dependent on pre-exposure to sand fly saliva, which induces a cellular immune response. The thesis highlights the dominance of eosinophils as the main leukocytes infiltrating tissue in response to sand fly saliva. The second most predominant population was monocytes/macrophages, but no inflammatory markers, CD38 and iNOS, were associated with them. Neutrophils, as a part of the cellular infiltrate, represent the smallest population at studied time points, and the magnitude of their response to sand fly saliva was the slightest compared to the other studied populations. The outcomes of this thesis raised new questions concerning the role of these leukocytes in the protective effect. Although these questions were not answered, they provided inspiration for the follow-up studies. The diploma thesis also dealt with the effect of different immunization scenarios on the course of ongoing Leishmania infection in mice sensitized with sand fly saliva. As demonstrated, the protective effect can be bypassed, probably due to a strong antagonistic immune response at the time of infection. Additionally, the effect of sand fly saliva on ongoing infection is not clear-cut and rather depends on the established immune response of the host. The last part of this diploma thesis addressed the possible use of splenocytes from long-term immunized mice for antibody production. However, the yield of this system was low, and thus it does not appear to be a reliable model for studies about antibody production.