Abstract

The development of autoinflammatory diseases is caused by the dysregulation of innate immune mechanisms. This leads to the development of spontaneous inflammation. Mice lacking adaptor protein PSTPIP2 develop chronic autoinflammatory osteomyelitis due to higher activity of neutrophil granulocytes and their increased production of IL-1β. PSTPIP2 interacts with PEST phosphatases and kinase CSK. These proteins are important negative regulators of Src family kinases. In this diploma thesis, the role of Src family kinases and the role of their positive regulator phosphatase CD45 in the development of chronic autoinflammatory osteomyelitis was studied. For this purpose, a mouse model of chronic autoinflammatory osteomyelitis (CMO) lacking CD45 was used. These mice develop the disease with delayed kinetics. Bone marrow cells isolated from these mice produce less IL-1β upon silica activation and have lower phosphorylation of ERK MAP kinase. It is probably caused by higher phosphorylation of the inhibitory tyrosine of Src family kinases resulting in their lower activity. The presence of different immune cell populations in the bone marrow, spleen and blood of these mice was also monitored in these mice. The results of this work contribute to a better understanding of the role of Src family kinases and phosphatase CD45 in the development of chronic autoinflammatory osteomyelitis.