The skin plays a key role in maintaining the stability of the body's internal environment and protecting the body against the negative effects of the environment, while ensuring constant contact with it. This organ is the first line of defense against potentially harmful substances from the external environment and pathogens. Keratinocytes, which are key cells in the epidermis, not only provide a protective barrier against the negative effects of the external environment, but there are also involved in regulation of inflammatory processes in the skin. The disorder of homeostasis prevailing in the skin can lead to the development of chronic diseases such as psoriasis.

MCPIP1 (*Monocyte Chemotactic Protein-1-Induced Protein 1)* is encoded by the Zc3h12a gene and belongs to the MCPIP family of proteins whose characteristic feature is the CCCH single-finger zinc motif and the PIN (*PiLT N-Terminus)* domain. These domains are responsible for the MCPIP1 protein's ribonucleolytic activity, which can degrade transcripts coding for various proteins, including inflammatory cytokines, thereby regulating many of the cell's processes, such as immune response, cell growth and migration. MCPIP1, as a negative regulator of inflammation, also plays an important role in the physiology and pathophysiology of the epidermis. It is known that the level of MCPIP1 protein is increased in the skin of people suffering from psoriasis.

The aim of this project is to test the role of MCPIP1 in the interaction of skin cells (keratinocytes) with cells of the immune system (myeloid line) during the development of psoriasis. To reach this aim, 2 models will be used: genetically modified mice with lack of the *Zc2h12a* gene in myeloid cells, and with lack of the *Zc3h12a* gene both in keratinocytes and myeloid cells. After chemical induction of psoriasis, skin morphology and function as well as immune response will be analyzed using modern molecular biology methods.

The results of research planned under this project will help us to understand the mechanism responsible for the involvement of MCPIP1 in the interaction of skin cells with cells of the immune system. Furthermore, the results obtained will be useful in development of new therapeutic strategies for the treatment of psoriasis.