

Novel dual TLR7/8 antagonists for neuroinflammatory disorders

The toll-like receptor 7 and 8 (TLR7 and TLR8) are members of the family of pattern recognition receptors. TLR7 and TLR8 not only recognize single-stranded virus RNA in the context of innate immune responses to virus infections, but are also involved in the pathogenesis of autoimmunity through the recognition of endogenous single-stranded RNA. In recent years, novel small molecule TLR7/8 antagonists have been developed and are currently under investigation for the treatment of lupus erythematosus.

The aim of this project is to investigate whether TLR7/8 antagonists are potential therapeutic agents for the treatment of multiple sclerosis and neuromyelitis optica spectrum disorders. The project includes flow cytometry analysis of human peripheral blood mononuclear cells after pretreatment with TLR7/8 antagonists and stimulation with proinflammatory agents. Additionally, cytokine production will be evaluated in serum and cell culture supernatants using the ELISA technique.