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Systemic autoimmune diseases

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Multiple sclerosis (MS), a chronic neuro inflammatory autoimmune disease, commonly caused by immune hyper reactivity and characterized by the formation of lesions in the central nervous system (also called plaques), inflammation and the destruction of myelin sheaths of neurons. Peptides are recognized for being highly selective and efficacious and at the same time, relatively safe and well tolerated. Approximately 140 peptides therapeutics are currently being evaluated in clinical trials. Such approaches are multifunctional and cell penetrating peptides, as well as peptide drug conjugates. Before and after presence of selective peptides (IL-2, IL-27, TGFβ and retinoic acid), we will analyze plasma levels and gene expressions (Tbet, RORγt and FoxP3) of essential cytokines, after induction (MOG) in the C57BL/6 mice using EAE scoring method, splenocyte cell culture, ELISA, flow cytometer and Real Time PCR. RT PCR amplifications will perform to determining the level of IL-10, IL-2, IL-4, IL-27, IL-35 and TGF-β as well as in Retinoic acid and IL-12, IFN γ, IL-17, IL-1, IL-6 and IL-23 and mRNA expression levels using the RNA extraction kit. Recent studies showed that a significant decrease in IL-10, IL-2, IL-4, IL-27, IL-35 and TGF-β as well as in retinoic acid in patients serum but there was no significant difference in the IL-12, IFN γ, IL-17, IL-1,IL-6 and IL-23 between patients and healthy controls. In this study, we will describe the role of pro inflammatory cytokines in the development of MS. The role of selective peptides on the preventive and therapeutic of MS and will discuss on the experimental test results determining the level of IL-10, IL-2, IL-27, IL-35 and TGF-β as well as in retinoic acid and IL-12, IFN γ, IL-17, IL-1, IL-6, IL-23 of this disease targeting the cytokines network.

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