STRUCTURAL ELUCIDATION OF MANNAN (POLYMANNOSE) CONJUGATE WITH THE MYELIN OLIGODENDROCYTE GLYCOPROTEIN 35-55 EPITOPE (MOG_{35-55}) USING NMR SPECTROSCOPY

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Multiple sclerosis (MS) is an immunologically mediated [1], inflammatory, autoimmune disorder of the Central Nervous System (CNS) and it is characterized by destruction of the myelin sheath leading to paralysis and serious health problems. One of the main proteins of myelin is the myelin oligodendrocyte glycoprotein MOG and is heavily implicated in the progress of MS. MOG protein is associated with the demyelination in animals in Experimental Autimmune Encephalomyelitis (EAE). The 35-55 epitope of MOG protein is considered to be a main autoantigen in the pathogenesis of MS and is connected with the induction of EAE in mice. This epitope conjugated with polysaccharide mannan in its oxidized form, was found to protect mice from EAE and could be a promising approach for the immunotherapy of MS [2]. Mannose, mannan polysaccharide, oxidized mannan and the conjugates of immunodominant MOG_{35-55} epitope with mannan in oxidized form were studied by high field Nuclear Magnetic Resonance (NMR) spectroscopy to explore their structural characteristics. This study was also used to detect any structural alteration in the conjugates during storage conditions.

Keywords: multiple sclerosis; myelin oligodendrocyte glycoprotein; nuclear magnetic resonance

References

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