Product Data Sheet

Product Name: Myelin Basic Protein (68-82), guinea pig
Cat. No.: GP10006

Chemical Properties

Cas. No.	98474-59-0		
Formula	$C_{71}H_{113}N_{23}O_{28}$	M.Wt	1736.81
Solubility	≥ 173.6mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Protocol

Kinase experiment:

For each individual, the whole blood sample is typically divided into six 1 mL aliquots/tubes. Concanavalin A is added to tube 1 (positive control). Tube 2 is left untreated. Tube 3 is treated with human albumin as a negative control. Human total MBP, human MBP 104-118 fragment and guinea pig MBP (68-82) are added to tubes 4, 5 and 6, respectively. All proteins are added to a final concentration of 2 μg/mL. All experiments (incubations and flow cytometric analysis) are performed in duplicate for each subject[1].

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Animal experiment:

Rats[2]Ten-week-old female Lewis rats are divided into the following two experimental groups: BVA-pretreated (every 3 days from 20 min before immunization) and BVA-posttreated (daily from days 10-15 after immunization) groups. Each experimental group is subdivided into the following five groups: normal [saline, subcutaneous (s.c.)+saline, s.c.], MBP [250 μg of myelin basic protein MBP (68-82), s.c.+saline, s.c., ST36 acupoint], MBP+BVA 0.25 [250 μg of MBP (68-82), s.c.+0.25 mg/kg body weight of BV, s.c., ST36 acupoint], MBP+BVA 0.8 [250 μg of MBP (68-82), s.c.+0.8 mg/kg body weight of BV, s.c., ST36 acupoint], and BVA alone [saline, s.c.+0.8 mg/kg body weight of BV, s.c., ST36 acupoint] groups. EAE is induced with an emulsion containing 250 μg of MBP (68-82) and 100 μg of Mycobacterium M. tuberculosis per mL of incomplete Freund’s adjuvant. A total of 0.2 mL of this emulsion is injected s.c. into the two hind footpads of rats except for those in the normal group and BVA alone group. Additionally, rats receive intraperitoneal (i.p.) injections of 200 ng of pertussis toxin on days 0 and 2. Rats in the normal group are treated with saline alone instead of MBP (68-82) peptide, pertussis toxin, or BVA[2].

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References:

[1]. Arneth B. Early activation of CD4+ and CD8+ T lymphocytes by myelin basic protein in subjects with MS. J Transl Med. 2015 Nov 2;13:341.
[2]. Lee MJ, et al. Bee Venom Acupuncture Alleviates Experimental Autoimmune Encephalomyelitis by Upregulating Regulatory T Cells and Suppressing Th1 and Th17 Responses. Mol Neurobiol. 2016 Apr;53(3):1419-1445.

Background

Myelin Basic Protein (68-82), guinea pig,(C71H113N23O28) is a peptide with the sequence Tyr-Gly-Ser-Leu-Pro-Gln-Lys-Ser-Gln-Arg-Ser-Gln-Asp-Glu-Asn, MW= 1736.79. Myelin basic protein (MBP) is a protein believed to be important in the process of myelination of nerves in the nervous system. Knockout mice deficient in MBP showed decreased amounts of CNS myelination and have developed a progressive disorder

characterized by tremors, seizures, and early death. MBP research has centered on its role in demyelinating diseases, in particular, multiple sclerosis (MS). Several studies have uncovered the role of antibodies against MBP in the pathogenesis of MS.] Some studies have linked a genetic predisposition to MS to the MBP gene, though a majority have not. Some recent work has shown that inoculating an animal with MBP to generate an immune response against it increases blood-brain barrier permeability.

References:

1. Sakamoto Y, Kitamura K, Yoshimura K, Nishijima T, Uyemura K (March 1987). "Complete amino acid sequence of POprotein in bovine peripheral nerve myelin". J. Biol. Chem. 262 (9): 4208-14.
2. Deber CM, Reynolds SJ (April 1991). "Central nervous system myelin: structure, function, and pathology". Clin. Biochem. 24 (2): 113-34.
3. Inouye H, Kirschner DA (January 1991). "Folding and function of the myelin proteins from primary sequence data". J. Neurosci. Res. 28 (1): 1-17.
4. Berger T, Rubner P, Schautzer F, Egg R, Ulmer H, Mayringer I, Dilitz E, Deisenhammer F, Reindl M (July 2003). "Antimyelin antibodies as a predictor of clinically definite multiple sclerosis after a first demyelinating event". N. Engl. J. Med. 349 (2): 139-45.