

DESCRIPTION

Species Reactivity	Human
Specificity	Detects recombinant human MAG protein in Direct ELISA.
Source	Monoclonal Mouse IgG _{2B} Clone # 1099521
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human embryonic kidney cell, HEK293-derived human MAG/Siglec-4a Gly20-Pro516
Conjugate	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide
*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.	

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Myelin-Associated Glycoprotein (MAG), also known as Siglec-4a, is a type I transmembrane glycoprotein belonging to the Siglec family, a subgroup of the Ig superfamily (1). It is composed of an extracellular segment containing five Ig-like domains, a single transmembrane segment, and a cytoplasmic domain. Mature MAG exists as two isoforms, termed S-MAG (short) and L-MAG (long), due to alternative splicing of the cytoplasmic domain (1, 2). S-MAG has a predicted molecular weight of 67 kDa while L-MAG has a predicted molecular weight of 71 kDa (1, 2). Additionally, proteolytic cleavage of the extracellular domain produces a soluble MAG (3). Within shared regions in the extracellular domain, human MAG shares 95% aa sequence identity with mouse and rat MAG. MAG functions as an adhesion molecule during neural development. It preferentially binds to α-2,3-linked sialic acid terminal structures found on cell surface molecules (1, 4, 5). MAG is selectively expressed by myelinating oligodendrocytes and Schwann cells and plays an important role in axon-myelin stability (1, 4). Specifically, L-MAG is involved in myelination in the central nervous system (CNS) while S-MAG is the predominate isoform expressed during myelination in the peripheral nervous system (1). MAG is also reported to regulate the axon cytoskeleton and support the distribution of axon molecules at the nodes of Ranvier (1, 4). In addition, it has been identified as a major inhibitor of neurite outgrowth (1, 4, 6). However, MAG has also been reported to protect neurons from excitotoxicity (1, 7). MAG is believed to utilize the gangliosides GD1a and GT1b, the Nogo receptors NgR1 and NgR2/NGRH1, Integrin β1/CD29, and PIR-B to mediate its effects (1, 4, 5, 8, 9). Soluble MAG, which is released from myelin in large quantities, has been identified in normal human tissues and in tissues from patients with neurological disorders (3). It is believed that this soluble MAG might contribute to the lack of CNS neuron regeneration after injury (3).

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