ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Human Myelin-oligodendrocyte glycoprotein (MOG) Antibodies

Cat # MOG16-A	Rabbit Anti-Human MOG peptide IgG, aff pure	**SIZE**: 100 ug
Cat # MOG16-P	Human MOG control/blocking peptide	**SIZE**: 100 ug

Myelin-oligodendrocyte glycoprotein (MOG) is a member of the immunoglobulin (Ig) superfamily, exclusively expressed in the central nervous system (CNS). MOG is an intrinsic membrane protein characterized by a N-terminal extracellular immunoglobulin-like variable (Ig-like V-type) domain, two hydrophobic transmembrane domains and a cytoplasmic C-terminal region. The N-terminal MOG domain has strong homology with the N-terminus of butyrophilin, a protein expressed in the lactating mammary gland. Human MOG gene is localized to chromosome 6p22-p21.3 (band C of mouse chromosome 17) at the distal end of the MHC class Ib region. **Despite the similar names, oligodendrocyte-myelin glycoprotein (OMG) is a separate protein encoded within a large intron of the NF1 gene.** The 2 glycoproteins are associated specifically with oligodendrocytes and myelin, but have quite different roles in myelinogenesis and are structurally unrelated. MOG is an intrinsic membrane molecule with 2 transmembrane domains, whereas OMG is anchored in the outer leaflet of the plasma membrane through a glycophospholipid tail. OMG belongs to the family of proteins with a series of tandem leucine-rich repeats, while MOG is a member of the Ig superfamily.

MOG contains nine exons and eight separating introns, giving rise to at least eight alternatively spliced variants encoding for the MOG-alpha1-4 and MOG-beta 1-4 isoforms (16-26 kDa). The different MOG isoforms may interact to form homo- and heterodimers and trimers (55 and 78 kDa). During the last step of myelinogenesis, MOG is expressed in the CNS on the outermost surface (external lamella) of mature myelin sheaths and on the cell surface of myelinating oligodendrocytes. MOG is thought to function as a regulator of oligodendrocyte microtubule stability and as a mediator of interactions between myelin and the immune system in the complement cascade. Although MOG is a relatively minor component of the myelin membrane, it is a primary auto-antigen target involved in the pathogenesis of immune-mediated demyelinating diseases including experimental autoimmune encephalomyelitis (EAE) and multiple sclerosis.

The MOG 35-55 peptide is an immunodominant epitope of MOG that induces strong T and B cell responses. A single injection of this peptide fragment can produce an exacerbating-remitting neurologic disease with extensive plaque-like demyelination, which may serve as a model for investigating multiple sclerosis.

Sources of Antigen and Antibodies

Antigen	17-aa peptide from human MOG from the C-terminus of human MOG (1) ; **Designated (MOG16-P or control peptide)** conjugated to KLH
Ab Host/type	Rabbit, polyclonal IgG, purified over antigen-agarose column (#MOG16-A)
2-Ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder.

Suggested Use

Western: 1-5 ug/ml; MOG is ~26 kda
ELISA: 0.1-2 ug/ml

Specificity

Human MOG16-P is 100% conserved in rat, mouse, bovine, monkey, and chimp MOG protein. The sequence is also conserved in MOG isoforms alpha-1, alpha-4, and beta-1. Antibody cross-reactivity in various species is not known. The control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com\data\abblock.html).

General References: Pham-Dinh, D (1995) Genomics 29: 345-352; Pham-Dinh, D. (1995) Immunogenetics 42: 386-391; Pham-Dinh, D (1993) PNAS 90: 7990-7994; Roth, M.-P (1995) Genomics 28: 241-250; Ichikawa M (1996) J. Immunol. 157, 919-926; Bernard CC (1997) J. Mol. Med. 75, 77-87; Slavin A (1998) Autoimmunity 28, 109-120

This product is for In vitro research use only.

Related items

Monoclonal Antibodies to MOG35-55, and MOG autoantibodies detection kit

MOG16-A-P 70318A

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