

MAG (E-1): sc-166921

BACKGROUND

Myelin-associated glycoprotein (MAG) is a nervous system cell-surface adhesion protein that is involved in linking myelinating glial cells to neuronal axons. MAG contains a sialic acid binding site and five IgG-like domains, thus identifying MAG as a member of a subgroup of the immunoglobulin superfamily. Like myelin, MAG inhibits axonal outgrowth and contributes to the inhibitory properties of myelin. Growth inhibition by MAG has been shown to be blocked when cerebellar neurons are pre-incubated with the neurotrophins BDNF or GDNF. It is suggested that this neurotrophin priming elevates cAMP and activates PKA.

REFERENCES

- Lai, C., et al. 1987. Neural protein 1B236/myelin-associated glycoprotein (MAG) defines a subgroup of the immunoglobulin superfamily. *Immunol. Rev.* 100: 129-151.
- McKerracher, L., et al. 1994. Identification of myelin-associated glycoprotein as a major myelin-derived inhibitor of neurite growth. *Neuron* 13: 805-811.
- Quarles, R.H. 1997. Glycoproteins of myelin sheaths. *J. Mol. Neurosci.* 8: 1-12.
- Collins, B.E., et al. 1997. Sialic acid specificity of myelin-associated glycoprotein binding. *J. Biol. Chem.* 272: 1248-1255.
- Shen, Y.J., et al. 1998. Myelin-associated glycoprotein in myelin and expressed by Schwann cells inhibits axonal regeneration and branching. *Mol. Cell. Neurosci.* 12: 79-91.
- Cai, D., et al. 1999. Prior exposure to neurotrophins blocks inhibition of axonal regeneration by MAG and myelin via a cAMP-dependent mechanism. *Neuron* 22: 89-101.
- Schachner, M., et al. 2000. Multiple functions of the myelin-associated glycoprotein MAG (Siglec-4a) in formation and maintenance of myelin. *Glia* 29: 154-165.
- Vyas, A.A., et al. 2002. Gangliosides are functional nerve cell ligands for Myelin-associated glycoprotein (MAG), an inhibitor of nerve regeneration. *Proc. Natl. Acad. Sci. USA* 99: 8412-8417.

CHROMOSOMAL LOCATION

Genetic locus: MAG (human) mapping to 19q13.12; Mag (mouse) mapping to 7 B1.

SOURCE

MAG (E-1) is a mouse monoclonal antibody raised against amino acids 1-300 mapping near the N-terminus of MAG of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

MAG (E-1) is recommended for detection of MAG of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MAG siRNA (h): sc-35841, MAG siRNA (m): sc-35842, MAG shRNA Plasmid (h): sc-35841-SH, MAG shRNA Plasmid (m): sc-35842-SH, MAG shRNA (h) Lentiviral Particles: sc-35841-V and MAG shRNA (m) Lentiviral Particles: sc-35842-V.

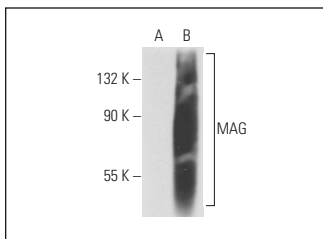
Molecular Weight of MAG: 100 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or MAG (h): 293T Lysate: sc-116497.

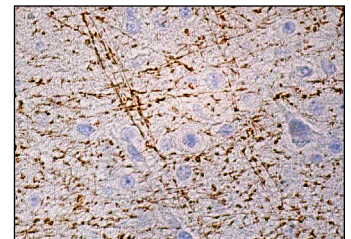
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MAG (E-1): sc-166921. Western blot analysis of MAG expression in non-transfected: sc-117752 (A) and human MAG transfected: sc-116497 (B) 293T whole cell lysates.



MAG (E-1): sc-166921. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing neuropil staining.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.