

MBP (C-1): sc-398212

BACKGROUND

Myelin basic protein (MBP) is the major extrinsic membrane protein of central nervous system myelin. MBP phosphorylation at Threonine 125 is a complex regulatory process that modulates the contribution of MBP to the stability of the myelin sheath. Mitogen-activated protein kinases modulate MBP phosphorylation during myelinogenesis and in the demyelinating disease multiple sclerosis. MBP phosphorylation is regulated by high-frequency stimulation but not low-frequency stimulation of the alveus, the myelinated output fibers of the hippocampus. It is proposed that during periods of increased neuronal activity, calcium activates axonal nitric oxide synthase, which generates the intercellular messengers nitric oxide and superoxide and regulates the phosphorylation state of MBP by MAPK.

REFERENCES

- Fraser, P.E. and Deber, C.M. 1985. Structure and function of the proline-rich region of myelin basic protein. *Biochemistry* 24: 4593-4598.
- Potter, N.T., et al. 1986. Identification of an antigenic determinant within the phylogenetically conserved triprolyl region of myelin basic protein. *J. Immunol.* 136: 516-520.
- Persaud, R., et al. 1988. The glycosylation of human myelin basic protein at Threonines 95 and 98 occurs sequentially. *Biochim. Biophys. Acta* 966: 357-361.
- Yon, M., et al. 1996. Identification of a mitogen-activated protein kinase site in human myelin basic protein *in situ*. *J. Neuroimmunol.* 65: 55-59.
- Atkins, C.M., et al. 1999. Regulation of myelin basic protein phosphorylation by mitogen-activated protein kinase during increased action potential firing in the hippocampus. *J. Neurochem.* 73: 1090-1097.

CHROMOSOMAL LOCATION

Genetic locus: MBP (human) mapping to 18q23; Mbp (mouse) mapping to 18 E3.

SOURCE

MBP (C-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 167-192 within an internal region of MBP of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398212 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

MBP (C-1) is recommended for detection of MBP isoforms 1-6 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MBP siRNA (h): sc-35871, MBP siRNA (m): sc-35872, MBP shRNA Plasmid (h): sc-35871-SH, MBP shRNA Plasmid (m): sc-35872-SH, MBP shRNA (h) Lentiviral Particles: sc-35871-V and MBP shRNA (m) Lentiviral Particles: sc-35872-V.

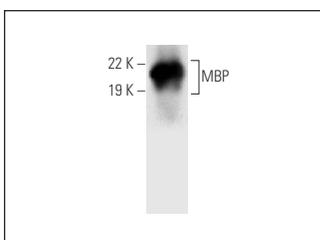
Molecular Weight of MBP isoforms: 14-22 kDa.

Positive Controls: human brain extract: sc-364375.

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.

DATA



MBP (C-1): sc-398212. Western blot analysis of MBP expression in human brain tissue extract.

SELECT PRODUCT CITATIONS

- Leicaj, M.L., et al. 2018. Changes in neurosteroidogenesis during demyelination and remyelination in cuprizone-treated mice. *J. Neuroendocrinol.* 30: e12649.

RESEARCH USE

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

CONJUGATES

See **MBP (F-6): sc-271524** for MBP antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.