

MBP (P-17): sc-31527

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 has been 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

1. Fraser, P.E. and Deber, C.M. 1985. Structure and function of the proline-rich region of myelin basic protein. *Biochemistry* 24: 4593-4598.
2. Potter, N.T., Hashim, G.A. and Day, E.D. 1986. Identification of an antigenic determinant within the phylogenetically conserved triprolyl region of myelin basic protein. *J. Immunol.* 136: 516-520.
3. Persaud, R., Fraser, P., Wood, D.D. and Moscarello, M.A. 1988. The glycosylation of human myelin basic protein at Threonines 95 and 98 occurs sequentially. *Biochim. Biophys. Acta* 966: 357-361.
4. Yon, M., Ackerley, C.A., Mastronardi, F.G., Groome, N. and Moscarello, M.A. 1996. Identification of a mitogen-activated protein kinase site in human myelin basic protein *in situ*. *J. Neuroimmunol.* 65: 55-59.
5. Atkins, C.M., Yon, M., Groome, N.P. and Sweatt, J.D. 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 (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MBP of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31527 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

MBP (P-17) is recommended for detection of myelin basic protein isoforms 3 and 4 (also designated MBP1 and MBP2) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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: 22 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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



Try **MBP (F-6): sc-271524** or **MBP (A-3): sc-376995**, our highly recommended monoclonal alternatives to MBP (P-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **MBP (F-6): sc-271524**.