

MBP (D-18): sc-13912

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

1. Fraser, P.E., et al. 1985. Structure and function of the proline-rich region of myelin basic protein. *Biochemistry* 24: 4593-4598.
2. 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.

CHROMOSOMAL LOCATION

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

SOURCE

MBP (D-18) 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-13912 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MBP (D-18) is recommended for detection of MBP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

MBP (D-18) is also recommended for detection of MBP in additional species, including equine, canine, bovine and porcine.

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.

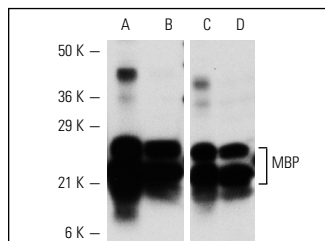
Molecular Weight of MBP isoforms: 14-22 kDa.

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

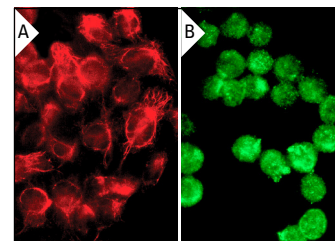
STORAGE

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

DATA



Western blot analysis of MBP isoform expression in rat (A, C) and mouse (B, D) brain extracts. Antibodies tested include: MBP (C-16): sc-13914 (A, B) and MBP (D-18): sc-13912 (C, D).



MBP (D-18): sc-13912. Immunofluorescence staining of methanol-fixed HeLa cells (A) and EOC 20 cells (B) showing membrane localization.

SELECT PRODUCT CITATIONS

1. Woltjer, R.L., et al. 2005. Proteomic determination of widespread detergent-insolubility including A β but not tau early in the pathogenesis of Alzheimer's disease. *FASEB J.* 19: 1923-1925.
2. Yu, H., et al. 2005. Partial rescue of neonatal lethality of Dhcr7 null mice by a nestin promoter-driven DHCR7 transgene expression. *Brain Res. Dev. Brain Res.* 156: 46-60.
3. Tang, H., et al. 2009. Type-1 angiotensin receptors are expressed and transported in motor and sensory axons of rat sciatic nerves. *Neuropeptides* 43: 81-92.
4. Gomez-Sanchez, J.A., et al. 2009. Sustained axon-glial signaling induces Schwann cell hyperproliferation, Remak bundle myelination, and tumorigenesis. *J. Neurosci.* 29: 11304-11315.
5. Deng, Y.Y., et al. 2010. Microglia-derived macrophage colony stimulating factor promotes generation of proinflammatory cytokines by astrocytes in the periventricular white matter in the hypoxic neonatal brain. *Brain Pathol.* 20: 909-925.
6. Kanakasabai, S., et al. 2012. PPAR γ agonists promote oligodendrocyte differentiation of neural stem cells by modulating stemness and differentiation genes. *PLoS ONE* 7: e50500.

RESEARCH USE

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



Try **MBP (F-6): sc-271524** or **MBP (A-3): sc-376995**, our highly recommended monoclonal alternatives to MBP (D-18). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **MBP (F-6): sc-271524**.