SANTA CRUZ BIOTECHNOLOGY, INC.

p-MBP (Thr 125)-R: sc-13915-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myelin basic protein (MBP) is the major extrinsic membrane protein of central nervous system Myelin and has a molecular mass of 21.5 kDa. Myelin basic protein 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 inter cellular 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 E2-E4.

SOURCE

p-MBP (Thr 125)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 125 phosphorylated 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-13915-R 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

p-MBP (Thr 125)-R is recommended for detection of Thr 125 phosphorylated MBP 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.

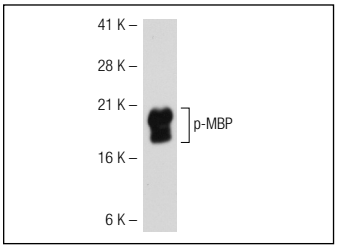
Molecular Weight of p-MBP: 33 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



p-MBP (Thr 125)-R: sc-13915-R. Western blot analysis of MBP phosphorylation in mouse brain tissue extract.

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.