SANTA CRUZ BIOTECHNOLOGY, INC.

MBP (F-6): sc-271524

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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., 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 (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 196-237 within an internal region of MBP of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MBP (F-6) is available conjugated to agarose (sc-271524 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271524 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271524 PE), fluorescein (sc-271524 FITC), Alexa Fluor® 488 (sc-271524 AF488), Alexa Fluor® 546 (sc-271524 AF546), Alexa Fluor® 594 (sc-271524 AF594) or Alexa Fluor® 647 (sc-271524 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271524 AF680) or Alexa Fluor® 790 (sc-271524 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, MBP (F-6) is available conjugated to biotin (sc-271524 B), 200 µg/ml, for WB, IHC(P) and ELISA.

Blocking peptide available for competition studies, sc-271524 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

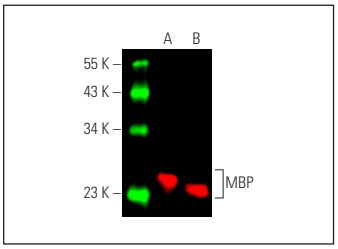
MBP (F-6) is recommended for detection of MBP isoforms 1, 3, 4, 5 and 6, (also designated Golli-MBP1, MBP1, MBP2, MBP3 and MBP4) of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml 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 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.

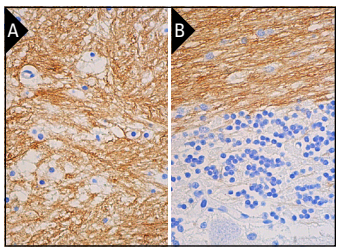
Molecular Weight of MBP isoforms: 14-22 kDa.

Positive Controls: mouse brain extract: sc-2253, human brain extract: sc-364375 or rat brain extract: sc-2392.

DATA



MBP (F-6) Alexa Fluor® 790: sc-271524 AF790. Direct near-infrared western blot analysis of MBP expression in mouse brain (**A**) and human brain (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 680: sc-516730.



MBP (F-6) HRP: sc-271524 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human lateral ventricle tissue showing neuropil staining (**A**) and human cerebellum tissue showing neuropil staining in granular layer (**B**). Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Linden, J.R., et al. 2015. *Clostridium perfringens* ε toxin causes selective death of mature oligodendrocytes and central nervous system demyelination. MBio 6: e02513.
2. Zhao, Y., et al. 2022. Vascular endothelium deploys caveolin-1 to regulate oligodendrogenesis after chronic cerebral ischemia in mice. Nat. Commun. 13: 6813.
3. Gao, D., et al. 2023. Icariin ameliorates behavioral deficits and neuropathology in a mouse model of multiple sclerosis. Brain Res. 1804: 148267.
4. Poddar, J., et al. 2024. Therapeutic efficacy of cinnamein, a component of balsam of Tolu/Peru, in controlled cortical impact mouse model of TBI. Neurochem. Int. 176: 105742.

STORAGE

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