

MP1 (H-6): sc-376783

BACKGROUND

MP1 (MEK partner 1) functions as a scaffolding protein in the mitogen activated protein (MAP) kinase signaling pathway. Growth factor induced MAP kinase activation is selectively mediated by the extracellular signal-regulated kinase (ERK) cascade. This pathway is dependent on the phosphorylation of MEK-1 and its subsequent activation of ERK 1. MP1 binds to the proline-rich domain of MEK-1 and thereby potentiates the phosphorylation of MEK-1 by the activating MEK kinase B-Raf. MP1 is also able to enhance the kinase activity of MEK-1 and facilitate the phosphorylation of ERK 1. *In vivo* studies indicate that MP1 preferentially associates with MEK-1 and ERK 1, but not with MEK-2 or ERK 2, suggesting that MP1 and other scaffolding proteins contribute to the specificity of the kinase substrates within the MAPK pathways.

REFERENCES

1. Elion, E.A. 1998. Routing MAP kinase cascades. *Science* 281: 1625-1626.
2. Schaeffer, H.J., et al. 1998. MP1: a MEK binding partner that enhances enzymatic activation of the MAP kinase cascade. *Science* 281: 1668-1671.
3. Whitmarsh, A.J., et al. 1998. A mammalian scaffold complex that selectively mediates MAP kinase activation. *Science* 281: 1671-1674.
4. Garrington, T.P., et al. 1999. Organization and regulation of mitogen-activated protein kinase signaling pathways. *Curr. Opin. Cell Biol.* 11: 211-218.
5. Schaeffer, H.J., et al. 1999. Mitogen-activated protein kinases: specific messages from ubiquitous messengers. *Mol. Cell. Biol.* 19: 2435-2444.

CHROMOSOMAL LOCATION

Genetic locus: LAMTOR3 (human) mapping to 4q23; Lamtor3 (mouse) mapping to 3 G3.

SOURCE

MP1 (H-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of MP1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MP1 (H-6) is available conjugated to agarose (sc-376783 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376783 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376783 PE), fluorescein (sc-376783 FITC), Alexa Fluor® 488 (sc-376783 AF488), Alexa Fluor® 546 (sc-376783 AF546), Alexa Fluor® 594 (sc-376783 AF594) or Alexa Fluor® 647 (sc-376783 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376783 AF680) or Alexa Fluor® 790 (sc-376783 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376783 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MP1 (H-6) is recommended for detection of MP1 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).

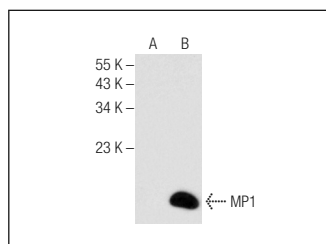
MP1 (H-6) is also recommended for detection of MP1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MP1 siRNA (h): sc-40746, MP1 siRNA (m): sc-40747, MP1 shRNA Plasmid (h): sc-40746-SH, MP1 shRNA Plasmid (m): sc-40747-SH, MP1 shRNA (h) Lentiviral Particles: sc-40746-V and MP1 shRNA (m) Lentiviral Particles: sc-40747-V.

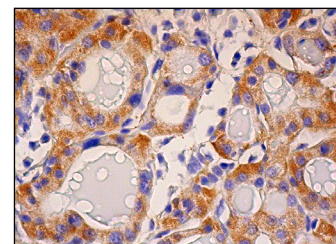
Molecular Weight of MP1: 14 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243 or MP1 (m): 293T Lysate: sc-121727.

DATA



MP1 (H-6): sc-376783. Western blot analysis of MP1 expression in non-transfected: sc-117752 (A) and mouse MP1 transfected: sc-121727 (B) 293T whole cell lysates.



MP1 (H-6): sc-376783. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Du, X., et al. 2022. Nuciferine protects against high-fat diet-induced hepatic steatosis and Insulin resistance via activating TFEB-mediated autophagy-lysosomal pathway. *Acta Pharm. Sin. B* 12: 2869-2886.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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