

MAPBPIP (FL-125): sc-135300

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. MAPBPIP (mitogen-activated protein-binding protein-interacting protein), also known as p14 and late endosomal/lysosomal MP1-interacting protein, functions as an adaptor protein augmenting the regulation of the MAP kinase cascade. Partner proteins MAPBPIP and MP1 are structurally almost identical each with a five-stranded β -sheet flanked between a two-helix and one-helix layer. MAPBPIP compels the recruitment of MP1 to late endosomes where they form a very stable heterodimeric complex required for ERK activation on endosomes. Knockdown of the individual proteins in the MP1/MAPBPIP complex resulted in decreased expression of the partner proteins which implies greater stability of the heterodimeric complex than either MP1 or MAPBPIP individually. Early research suggests the MP1-MAPBPIP-MEK-1 signaling complex may be critical in the regulation of tissue homeostasis.

REFERENCES

1. Wunderlich, W., et al. 2001. A novel 14 kDa protein interacts with the mitogen-activated protein kinase scaffold MP1 on a late endosomal/lysosomal compartment. *J. Cell Biol.* 152: 765-776.
2. Teis, D., et al. 2002. Localization of the MP1-MAPK scaffold complex to endosomes is mediated by p14 and required for signal transduction. *Dev. Cell* 3: 803-814.
3. Kurzbauer, R., et al. 2004. Crystal structure of the p14/MP1 scaffolding complex: how a twin couple attaches mitogen-activated protein kinase signaling to late endosomes. *Proc. Natl. Acad. Sci. USA* 101: 10984-10989.
4. Lunin, V.V., et al. 2004. The structure of the MAPK scaffold, MP1, bound to its partner, p14. A complex with a critical role in endosomal map kinase signaling. *J. Biol. Chem.* 279: 23422-23430.
5. Pullikuth, A., et al. 2005. The MEK1 scaffolding protein MP1 regulates cell spreading by integrating PAK1 and Rho signals. *Mol. Cell. Biol.* 25: 5119-5133.
6. Teis, D., et al. 2006. p14-MP1-MEK1 signaling regulates endosomal traffic and cellular proliferation during tissue homeostasis. *J. Cell Biol.* 175: 861-868.
7. Bohn, G., et al. 2007. A novel human primary immunodeficiency syndrome caused by deficiency of the endosomal adaptor protein p14. *Nat. Med.* 13: 38-45.

CHROMOSOMAL LOCATION

Genetic locus: LAMTOR2 (human) mapping to 1q22; Lamtor2 (mouse) mapping to 3 F1.

SOURCE

MAPBPIP (FL-125) is a rabbit polyclonal antibody raised against amino acids 1-125 representing full length MAPBPIP of human origin.

PRODUCT

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

APPLICATIONS

MAPBPIP (FL-125) is recommended for detection of MAPBPIP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

MAPBPIP (FL-125) is also recommended for detection of MAPBPIP in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MAPBPIP siRNA (h): sc-88091, Mapbpip siRNA (m): sc-77328, MAPBPIP shRNA Plasmid (h): sc-88091-SH, Mapbpip shRNA Plasmid (m): sc-77328-SH, MAPBPIP shRNA (h) Lentiviral Particles: sc-88091-V and Mapbpip shRNA (m) Lentiviral Particles: sc-77328-V.

Molecular Weight of MAPBPIP: 14 kDa.

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 A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

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 or our catalog for detailed protocols and support products.