SANTA CRUZ BIOTECHNOLOGY, INC.

MP1 (B-12): sc-25345

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 MEK1 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., Catling, A.D., Eblen, S.T., Collier, L.S., Krauss, A. and Weber, M.J. 1998. MP1: a MEK binding partner that enhances enzymatic activation of the MAP kinase cascade. Science 281: 1668-1671.
3. Whitmarsh, A.J., Cavanagh, J., Tournier, C., Yasuda, J. and Davis, R.J. 1998. A mammalian scaffold complex that selectively mediates MAP kinase activation. Science 281: 1671-1674.
4. Garrington, T.P. and Johnson, G.L. 1999. Organization and regulation of mitogen-activated protein kinase signaling pathways. Curr. Opin. Cell Biol. 11: 211-218.
5. Schaeffer, H.J. and Weber, M.J. 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 (B-12) is a mouse monoclonal antibody raised against amino acids 1-124 of MP1 of mouse 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.

MP1 (B-12) is available conjugated to agarose (sc-25345 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

MP1 (B-12) is recommended for detection of MP1 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), immunohistochemistry (including paraffin-embedded sections) (start-ing 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 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.

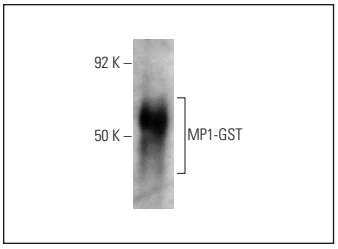
Molecular Weight of MP1: 14 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243.

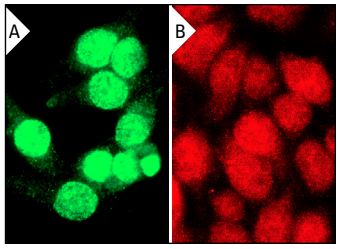
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MP1 (B-12): sc-25345. Western blot analysis of GST-tagged human recombinant MP1.



MP1 (B-12): sc-25345. Immunofluorescence staining of methanol-fixed NIH/3T3 cells (**A**) and HeLa cells (**B**) showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Daniels, M.A., Teixeiro, E., Gill, J., Hausmann, B., Roubaty, D., Holmberg, K., Werlen, G., Holländer, G.A., Gascoigne, N.R. and Palmer, E. 2006. Thymic selection threshold defined by compartmentalization of Ras/MAPK signalling. Nature 444: 724-729.

RESEARCH USE

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