

MEK kinase-2 (H-80): sc-28768

BACKGROUND

Mitogen-activated protein (MAP) kinase cascades are activated by various extracellular stimuli including growth factors. The MEK kinases (also designated MAP kinase kinase kinases, MKKKs, MAP3Ks or MEKKs) phosphorylate and thereby activate the MEKs (also called MAP kinase kinases or MKKs), including ERK, JNK and p38. These activated MEKs in turn phosphorylate and activate the MAP kinases. The MEK kinases include Raf-1, Raf-B, Mos, MEK kinase-1, MEK kinase-2, MEK kinase-3, MEK kinase-4, ASK 1 (MEK kinase-5) and MAP3K6 (MEK kinase-6). MEK kinase-1 has been shown to phosphorylate MEK-1 via a Raf-independent pathway. Evidence suggests that MEK-3 is preferentially activated by MEK kinase-3 and that MEK-4 is activated by both MEK kinase-2 and MEK kinase-3. MEK kinase-4 has been shown to specifically activate the JNK pathway. ASK 1 activates both MEK-4 and MEK-3/MEK-6 pathways.

REFERENCES

1. Lange-Carter, C.A., et al. 1993. A divergence in the MAP kinase regulatory network defined by MEK kinase and Raf. *Science* 260: 315-319.
2. Guan, K.L. 1994. The mitogen activated protein kinase signal transduction pathway: from the cell surface to the nucleus. *Cell. Signal.* 6: 581-589.
3. Wang, X.S., et al. 1996. Molecular cloning and characterization of a novel protein kinase with a catalytic domain homologous to mitogen-activated protein kinase kinase kinase. *J. Biol. Chem.* 271: 31607-31611.
4. Gerwins, P., et al. 1997. Cloning of a novel mitogen-activated protein kinase kinase, MEKK4, that selectively regulates the c-Jun amino terminal kinase pathway. *J. Biol. Chem.* 272: 8288-8295.
5. Deacon, K. and Blank, J.L. 1997. Characterization of the mitogen-activated protein kinase kinase 4 (MKK4)/c-Jun NH₂-terminal kinase 1 and MKK3/p38 pathways regulated by MEK kinases 2 and 3. MEK kinase 3 activates MKK3 but does not cause activation of p38 kinase *in vivo*. *J. Biol. Chem.* 272: 14489-14496.
6. Fanger, G.R., et al. 1997. MEK kinases are regulated by EGF and selectively interact with Rac/Cdc42. *EMBO J.* 16: 4961-4972.

CHROMOSOMAL LOCATION

Genetic locus: MAP3K2 (human) mapping to 2q14.3; Map3k2 (mouse) mapping to 18 B1.

SOURCE

MEK kinase-2 (H-80) is a rabbit polyclonal antibody raised against amino acids 281-360 mapping within an internal region of MEK kinase-2 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.

STORAGE

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

APPLICATIONS

MEK kinase-2 (H-80) is recommended for detection of MEK kinase-2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MEK kinase-2 (H-80) is also recommended for detection of MEK kinase-2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MEK kinase-2 siRNA (h): sc-35900, MEK kinase-2 siRNA (m): sc-35901, MEK kinase-2 shRNA Plasmid (h): sc-35900-SH, MEK kinase-2 shRNA Plasmid (m): sc-35901-SH, MEK kinase-2 shRNA (h) Lentiviral Particles: sc-35900-V and MEK kinase-2 shRNA (m) Lentiviral Particles: sc-35901-V.

Molecular Weight of MEK kinase-2: 70 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or BJAB whole cell lysate: sc-2207.

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.

SELECT PRODUCT CITATIONS

1. Nakamura, K. and Johnson, G.L. 2010. Activity assays for extracellular signal-regulated kinase 5. *Methods Mol. Biol.* 661: 91-106.

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.



Try **MEK kinase-2 (H-9): sc-398091**, our highly recommended monoclonal alternative to MEK kinase-2 (H-80).