

p-MEK kinase-3 (Ser 337): sc-28044

BACKGROUND

Mitogen-activated protein (MAP) kinase cascades are activated by various extracellular stimuli including growth factors. The MEK kinases (also called MAP kinase kinase kinases) phosphorylate and activate the MAP kinases, including ERK, JNK and p38. The MEK kinases characterized to date include Raf-1, Raf-B, MOS, MEK kinase-1, MEK kinase-2, MEK kinase-3, MEK kinase-4 and ASK 1 (also designated MEK kinase-5). 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. SGK1 inhibits MEK-3-MKK3/6 signal transduction by phosphorylation of MEK-3 on Ser 166 and Ser 337.

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. Fanger, G.R., et al. 1997. MEK kinases are regulated by EGF and selectively interact with Rac/Cdc42. *EMBO J.* 16: 4961-4972.
5. Gerwins, P., et al. 1997. Cloning of a novel mitogen-activated protein kinase kinase kinase, MEKK4, that selectively regulates the c-Jun amino terminal kinase pathway. *J. Biol. Chem.* 272: 8288-8295.
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7. Adams, D.G., et al. 2002. Phosphorylation of the stress-activated protein kinase, MEKK3, at serine 166. *Arch. Biochem. Biophys.* 407: 103-116.

CHROMOSOMAL LOCATION

Genetic locus: MAP3K3 (human) mapping to 17q23.3; Map3k3 (mouse) mapping to 11 E1.

SOURCE

p-MEK kinase-3 (Ser 337) is available as either goat (sc-28044) or rabbit (sc-28044-R) polyclonal antibody raised against a short amino acid sequence containing Ser 337 phosphorylated MEK kinase-3 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.

Blocking peptide available for competition studies, sc-28044 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-MEK kinase-3 (Ser 337) is recommended for detection of Ser 337 phosphorylated MEK kinase-3 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) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

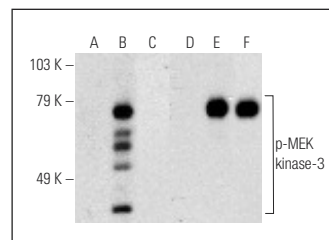
p-MEK kinase-3 (Ser 337) is also recommended for detection of correspondingly phosphorylated MEK kinase-3 in additional species, including canine.

Suitable for use as control antibody for MEK kinase-3 siRNA (h): sc-39108, MEK kinase-3 siRNA (m): sc-156010, MEK kinase-3 shRNA Plasmid (h): sc-39108-SH, MEK kinase-3 shRNA Plasmid (m): sc-156010-SH, MEK kinase-3 shRNA (h) Lentiviral Particles: sc-39108-V and MEK kinase-3 shRNA (m) Lentiviral Particles: sc-156010-V.

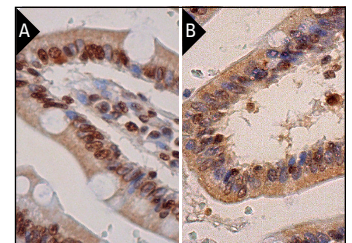
Molecular Weight of p-MEK kinase-3: 71 kDa.

Positive Controls: MEK kinase-3 (m): 293T Lysate: sc-125599.

DATA



Western blot analysis of MEK kinase-3 phosphorylation in non-transfected: sc-117752 (A,D), untreated mouse MEK kinase-3 transfected: sc-125599 (B,E) and lambda protein phosphatase (sc-200312A) treated mouse MEK kinase-3 transfected: sc-125599 (C,F) 293T whole cell lysates. Antibodies tested include p-MEK kinase-3 (Ser 337)-R: sc-28044-R (A,B,C) and MEK kinase-3 (40): sc-136260 (D,E,F).



Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells. Antibodies tested include: p-MEK kinase-3 (Ser 337): sc-28044 (A) and p-MEK kinase-3 (Ser 337)-R: sc-28044-R (B).

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.