SANTA CRUZ BIOTECHNOLOGY, INC.

MEK kinase-4 (D-19): sc-6846

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The Power to Question

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 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. ASK1 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. Fanger, G.R., et al. 1997. MEK kinases are regulated by EGF and selectively interact with Rac/Cdc42. EMBO J. 16: 4961-4972.
5. Deacon, K., et al. 1997. Characterization of the mitogen-activated protein kinase kinase 4 (MKK4)/ c-Jun NH_2-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. 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.

CHROMOSOMAL LOCATION

Genetic locus: Map3k4 (mouse) mapping to 17 A1.

SOURCE

MEK kinase-4 (D-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MEK kinase-4 of mouse 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-6846 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

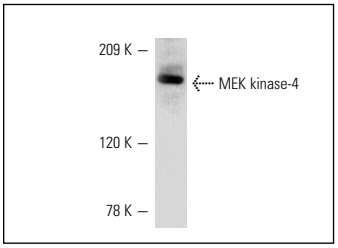
MEK kinase-4 (D-19) is recommended for detection of MEK kinase-4α and MEK kinase-4β of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MEK kinase-4 siRNA (m): sc-35903, MEK kinase-4 shRNA Plasmid (m): sc-35903-SH and MEK kinase-4 shRNA (m) Lentiviral Particles: sc-35903-V.

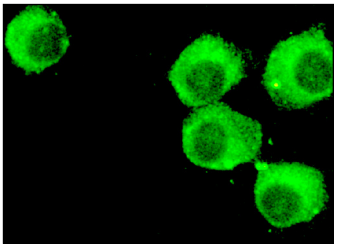
Molecular Weight of MEK kinase-4: 180 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214.

DATA



MEK kinase-4 (D-19): sc-6846. Western blot analysis of MEK kinase-4 expression in KNRK whole cell lysate.



MEK kinase-4 (D-19): sc-6846. Immunofluorescence staining of methanol-fixed KNRK cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Putcha, G.V., et al. 2003. JNK-mediated BIM phosphorylation potentiates BAX-dependent apoptosis. Neuron 38: 899-914.
2. Hammaker, D.R., et al. 2004. Regulation of c-Jun N-terminal kinase by MEKK-2 and mitogen-activated protein kinase kinase kinases in rheumatoid arthritis. J. Immunol. 172: 1612-1618.
3. Aissouni, Y., et al. 2005. CIN85 regulates the ability of MEKK4 to activate the p38 MAP kinase pathway. Biochem. Biophys. Res. Commun. 338: 808-814.

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.