SANTA CRUZ BIOTECHNOLOGY, INC.

MEK-4 (C-20): sc-837

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A family of protein kinases located upstream of the MAP kinases and responsible for their activation has been identified. The prototype member of this family, designated MAP kinase kinase, or MEK-1, specifically phosphorylates the MAP kinase regulatory threonine and tyrosine residues present in the Thr-Glu-Tyr motif of ERK. A second MEK family member, MEK-2, resembles MEK-1 in its substrate specificity. MEK-3 (or MKK-3) functions to activate p38 MAP kinase, and MEK-4 (also called SEK1 or MKK-4) activates both p38 and JNK MAP kinases. MEK-5 appears to specifically phosphorylate ERK5, whereas MEK-6 phosphorylates p38 and p38β. MEK-7 (or MKK-7) phosphorylates and activates the JNK signal transduction pathway.

REFERENCES

1. Crews, C.M., et al. 1992. The primary structure of MEK, a protein kinase that phosphorylates the ERK gene product. Science 258: 478-480.
2. Derijard, B., et al. 1995. Independent human MAP-kinase signal transduction pathways defined by MEK and MKK isoforms. Science 267: 682-685.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K4 (human) mapping to 17p11.2; Map2k4 (mouse) mapping to 11 B3.

SOURCE

MEK-4 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of MEK-4 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-837 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MEK-4 (C-20) is recommended for detection of MEK-4 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MEK-4 (C-20) is also recommended for detection of MEK-4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MEK-4 siRNA (h): sc-35909, MEK-4 siRNA (m): sc-35910, MEK-4 shRNA Plasmid (h): sc-35909-SH, MEK-4 shRNA Plasmid (m): sc-35910-SH, MEK-4 shRNA (h) Lentiviral Particles: sc-35909-V and MEK-4 shRNA (m) Lentiviral Particles: sc-35910-V.

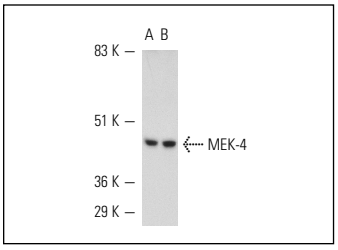
Molecular Weight of MEK-4: 45 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or Src-3T3 whole cell lysate.

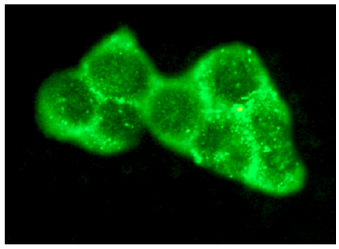
STORAGE

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

DATA



MEK-4 (C-20): sc-837. Western blot analysis of MEK-4 expression in NIH/3T3 (**A**) and Src-3T3 (**B**) whole cell lysates.



MEK-4 (C-20): sc-837. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic and membrane staining.

SELECT PRODUCT CITATIONS

1. Lee, F.S., et al. 1997. Activation of the IkB-α kinase complex by MEKK1, a kinase of the JNK pathway. Cell 88: 213-222.
2. Chan, E.D., et al. 1997. Preferential activation of the p46 isoform of JNK/SAPK in mouse macrophages by TNFα. Proc. Natl. Acad. Sci. USA 94: 13169-13174.
3. Hamza, M.S. 2004. ORF36 protein kinase of Kaposi's sarcoma herpesvirus activates the c-Jun N-terminal kinase signaling pathway. J. Biol. Chem. 279: 38325-38330.
4. Liu, W.H. and Lai, M.Z. 2005. Deltex regulates T-cell activation by targeted degradation of active MEKK1. Mol. Cell. Biol. 25: 1367-1378.
5. Koçer, S.S., et al. 2008. Effects of anthrax lethal toxin on human primary keratinocytes. J. Appl. Microbiol. 105: 1756-1767.
6. Liu, S., et al. 2008. Matrix metalloproteinase-activated anthrax lethal toxin demonstrates high potency in targeting tumor vasculature. J. Biol. Chem. 283: 529-540.
7. Nakagawa, K., et al. 2010. Filamin associates with stress signalling kinases MKK7 and MKK4 and regulates JNK activation. Biochem. J. 427: 237-245.
8. Lehmann, M., et al. 2009. Lung epithelial injury by *B. anthracis* lethal toxin is caused by MKK-dependent loss of cytoskeletal integrity. PLoS ONE 4: e4755.

RESEARCH USE

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