SANTA CRUZ BIOTECHNOLOGY, INC.

MEK kinase-1 (43-Y): sc-437

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 and ASK 1 (MEK kinase-5). MEK kinase-1 activates the ERK and c-Jun NH_2-terminal kinase (JNK) pathways by phosphorylation of MAP2K1 and MAP2K4, and also activates the central protein kinases of the NFκB pathway, CHUK and IKBKB. Additionally, MEK kinase-1 uses an E3 ligase through its PHD domain, a RING-finger-like structure, to target proteins for degradation through ubiquitination.

CHROMOSOMAL LOCATION

Genetic locus: MAP3K1 (human) mapping to 5q11.2; Map3k1 (mouse) mapping to 13 D2.2.

SOURCE

MEK kinase-1 (43-Y) is a rabbit polyclonal antibody raised against amino acids 1-301 mapping produced by immunization with 300 amino acid internal region of human MEK kinase-1 expressed in *E. coli* as polyhistidine tagged fusion protein of MEK kinase-1 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.

APPLICATIONS

MEK kinase-1 (43-Y) is recommended for detection of MEK kinase-1 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).

MEK kinase-1 (43-Y) is also recommended for detection of MEK kinase-1 in additional species, including bovine and canine.

Suitable for use as control antibody for MEK kinase-1 siRNA (h): sc-35898, MEK kinase-1 siRNA (m): sc-35899, MEK kinase-1 shRNA Plasmid (h): sc-35898-SH, MEK kinase-1 shRNA Plasmid (m): sc-35899-SH, MEK kinase-1 shRNA (h) Lentiviral Particles: sc-35898-V and MEK kinase-1 shRNA (m) Lentiviral Particles: sc-35899-V.

Molecular Weight of full length MEK kinase-1: 195 kDa.

Molecular Weight of cleaved MEK kinase-1: 80 kDa.

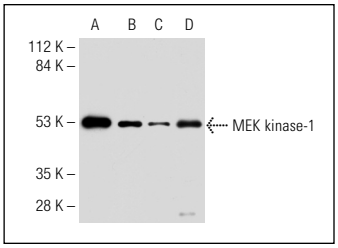
STORAGE

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

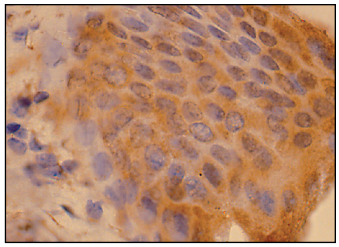
RESEARCH USE

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

DATA



Western blot analysis of His-tagged human recombinant MEK kinase-1. Antibodies tested include MEK kinase-1 (2-8B-5E): sc-448 at 1.0 µg/ml (**A**), 0.1 µg/ml (**B**) and 0.01 µg/ml (**C**) and MEK kinase-1 (43-Y): sc-437 at 0.1 µg/ml (**D**).



MEK kinase-1 (43-Y): sc-437. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse lymph node tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Hu, M.C., et al. 1996. Human HPK1, a novel human hematopoietic progenitor kinase that activates the JNK/SAPK kinase cascade. Genes Dev. 10: 2251-2264.
2. Avdi, N.J., et al. 1996. Activation of MEKK by formyl-methionyl-leucyl-phenylalanine in human neutrophils. Mapping pathways for mitogen-activated protein kinase activation. J. Biol. Chem. 271: 33598-33606.
3. Xu, P., et al. 2003. *In vitro* development of mouse embryonic stem cells lacking JNK/stress-activated protein kinase-associated protein 1 (JSAP1) scaffold protein revealed its requirement during early embryonic neurogenesis. J. Biol. Chem. 278: 48422-48433.
4. Colanzi, A., et al. 2003. RAF1-activated MEK1 is found on the Golgi apparatus in late prophase and is required for Golgi complex fragmentation in mitosis. J. Cell Biol. 161: 27-32.
5. Hammaker, D.R., et al. 2004. Regulation of c-Jun N-terminal kinase by MEKK2 and mitogen-activated protein kinase kinase kinases in rheumatoid arthritis. J. Immunol. 172: 1612-1618.
6. Vertrees, R.A., et al. 2005. A mechanism of hyperthermia-induced apoptosis in ras-transformed lung cells. Mol. Carcinog. 44: 111-121.
7. Woodmansee, W.W., et al. 2006. The proliferative status of thyrotropes is dependent on modulation of specific cell cycle regulators by thyroid hormone. Endocrinology 147: 272-282.
8. Baek, S.H., et al. 2006. Ligand-specific allosteric regulation of coactivator functions of androgen receptor in prostate cancer cells. Proc. Natl. Acad. Sci. USA 103: 3100-3105.