SANTA CRUZ BIOTECHNOLOGY, INC.

MEK kinase-1 (2-8B-5E): sc-448

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.

SOURCE

MEK kinase-1(2-8B-5E) is a mouse monoclonal antibody raised against amino acids 1-301 mapping at the N-terminus of MEK kinase-1 p72 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MEK kinase-1(2-8B-5E) is available conjugated to agarose (sc-448 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-448 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-448 PE), fluorescein (sc-448 FITC), Alexa Fluor® 488 (sc-448 AF488), Alexa Fluor® 546 (sc-448 AF546), Alexa Fluor® 594 (sc-448 AF594) or Alexa Fluor® 647 (sc-448 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-448 AF680) or Alexa Fluor® 790 (sc-448 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MEK kinase-1(2-8B-5E) is recommended for detection of MEK kinase-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

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

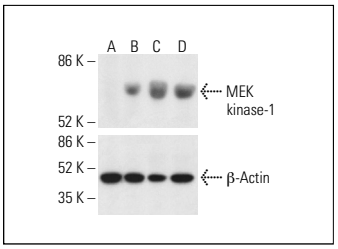
Molecular Weight of cleaved MEK kinase-1: 80 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, HeLa whole cell lysate: sc-2200 or HL-60 whole cell lysate: sc-2209.

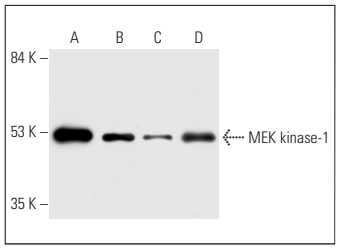
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



MEK kinase-1 (2-8B-5E): sc-448. Western blot analysis of MEK kinase-1 expression in untreated (**A**) and chemically-treated (**B**, **C**, **D**) SP2/0 whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



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**).

SELECT PRODUCT CITATIONS

1. Park, J., et al. 1997. Activation of c-Jun N-terminal kinase antagonizes an anti-apoptotic action of Bcl-2. J. Biol. Chem. 272: 16725-16728.
2. Dhawan, P. and Richmond, A 2002. A novel NFκB-inducing kinase-MAPK signaling pathway up-regulates NFκB activity in melanoma cells. J. Biol. Chem. 277: 7920-7928.
3. Wang, X., et al. 2010. Inhibition of Cot1/Tlp2 oncogene in AML cells reduces ERK5 activation and up-regulates p27Kip1 concomitant with enhancement of differentiation and cell cycle arrest induced by silibinin and 1,25-dihydroxyvitamin D_3. Cell Cycle 9: 4542-4551.
4. Wang, X., et al. 2019. Participation of vitamin D-upregulated protein 1 (TXNIP)-ASK1-JNK1 signalosome in the enhancement of AML cell death by a post-cytotoxic differentiation regimen. J. Steroid Biochem. Mol. Biol. 187: 166-173.

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 for detailed protocols and support products.