SANTA CRUZ BIOTECHNOLOGY, INC.

MEK-3 (I-20): sc-960

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 Mkk3) functions to activate p38 MAP kinase, and MEK-4 (also called SEK1 or Mkk4) activates both p38 and JNK MAP kinases. MEK-5 appears to specifically phosphorylate ERK 5, whereas MEK-6 phosphorylates p38 and p38b. MEK-7 (or Mkk7) phosphorylates and activates the JNK signal transduction pathway.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K3 (human) mapping to 17p11.2, MAP2K6 (human) mapping to 17q24.3; Map2k3 (mouse) mapping to 11 B2, Map2k6 (mouse) mapping to 11 E2.

SOURCE

MEK-3 (I-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of MEK-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-960 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MEK-3 (I-20) is recommended for detection of MEK-3, and to a lesser extent, MEK-6 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MEK-3 (I-20) is also recommended for detection of MEK-3, and to a lesser extent, MEK-6 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for MEK-3/6 siRNA (h): sc-43924, MEK-3/6 shRNA Plasmid (h): sc-43924-SH and MEK-3/6 shRNA (h) Lentiviral Particles: sc-43924-V.

Molecular Weight of MEK-3: 40 kDa.

Positive Controls: MEK-3 (h): 293T Lysate: sc-114954, K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

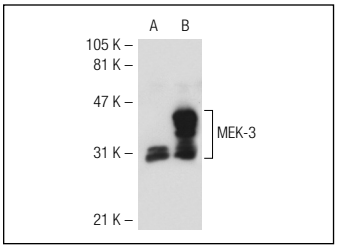
STORAGE

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

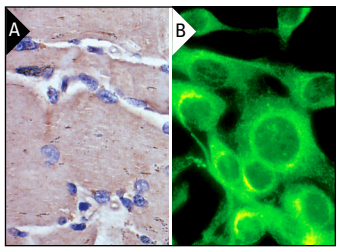
RESEARCH USE

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

DATA



MEK-3 (I-20): sc-960. Western blot analysis of MEK-3 expression in non-transfected: sc-117752 (**A**) and human MEK-3 transfected: sc-114954 (**B**) 293T whole cell lysates.



MEK-3 (I-20): sc-960. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human muscle tissue showing cytoplasmic staining (**A**). Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Hsu, S.C., et al. 1999. p38 mitogen-activated protein kinase is involved in Fas ligand expression. J. Biol. Chem. 274: 25769-25776.
2. Alileche, A., et al. 2005. Anthrax lethal toxin-mediated killing of human and murine dendritic cells impairs the adaptive immune response. PLoS Pathog. 1: e19.
3. Robidoux, J., et al. 2005. Selective activation of mitogen-activated protein (MAP) kinase kinase 3 and p38α MAP kinase is essential for cyclic AMP-dependent UCP1 expression in adipocytes. Mol. Cell. Biol. 25: 5466-5479.
4. Stavreva, D.A., et al. 2006. Potential roles for ubiquitin and the proteasome during ribosome biogenesis. Mol. Cell. Biol. 26: 5131-5145.
5. Makeeva, N., et al. 2006. Role of Mkk3 and p38 MAPK in cytokine-induced death of Insulin-producing cells. Biochem. J. 393: 129-139.
6. deCathelineau, A.M. and Bokoch, G.M. 2009. Inactivation of rho GTPases by statins attenuates anthrax lethal toxin activity. Infect. Immun. 77: 348-359.
7. Adhikary, G., et al. 2010. PKC-δ and -ε, MEKK-1, MEK-6, MEK-3, and p38-δ are essential mediators of the response of normal human epidermal keratinocytes to differentiating agents. J. Invest. Dermatol. 130: 2017-2030.
8. Harding, S.J., et al. 2010. Activation of ASK1, downstream MAPKK and MAPK isoforms during cardiac ischaemia. Biochim. Biophys. Acta 1802: 733-740.
9. Muehlbauer, S.M., et al. 2010. Proteasome inhibitors prevent caspase-1-mediated disease in rodents challenged with anthrax lethal toxin. Am. J. Pathol. 177: 735-743.