SANTA CRUZ BIOTECHNOLOGY, INC.

MEK-1/2 (9G3): sc-81504

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. Wu, J., et al. 1993. Identification and characterization of a new mammalian mitogen-activated protein kinase kinase, MKK-2. Mol. Cell. Biol. 13: 4539-4548.
3. Dérijard, B., et al. 1995. Independent human MAP-kinase signal transduction pathways defined by MEK and MKK isoforms. Science 267: 682-685.
4. Zhou, G., et al. 1995. Components of a new human protein kinase signal transduction pathway. J. Biol. Chem. 270: 12665-12669.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K1 (human) mapping to 15q22.31, MAP2K2 (human) mapping to 19p13.3; Map2k1 (mouse) mapping to 9 C, Map2k2 (mouse) mapping to 10 C1.

SOURCE

MEK-1/2 (9G3) is a mouse monoclonal antibody raised against the activation loop of MEK-1/2 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

MEK-1/2 (9G3) is recommended for detection of the activation loop of MEK-1 and MEK-2 (independent of its phosphorylation status) of mouse, rat, human and canine 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)].

Molecular Weight of MEK-1: 45 kDa.

Molecular Weight of MEK-2: 47 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HEK293 whole cell lysate: sc-45136 or HeLa whole cell lysate: sc-2200.

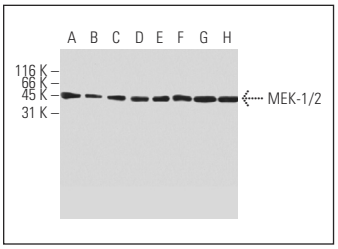
RESEARCH USE

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

STORAGE

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

DATA



MEK-1/2 (9G3): sc-81504. Western blot analysis of MEK-1/2 expression in serum starved HeLa (**A**), Hep G2 (**B**), HEK293 (**C**), SH-SY5Y (**D**), MDCK (**E**), PC-12 (**F**), CMT 93 (**G**), Neuro 2A (**H**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yeh, J.L., et al. 2008. Isoeugenodilol inhibits smooth muscle cell proliferation and neointimal thickening after balloon injury via inactivation of ERK 1/2 pathway. J. Biomed. Sci. 15: 375-389.
2. Fernández, I.F., et al. 2010. VRK2 inhibits mitogen-activated protein kinase signaling and inversely correlates with ErbB2 in human breast cancer. Mol. Cell. Biol. 30: 4687-4697.
3. Gantke, T., et al. 2013. Ebola virus VP35 induces high-level production of recombinant TPL-2-ABIN-2-NFκB1 p105 complex in co-transfected HEK293 cells. Biochem. J. 452: 359-365.
4. Kumarasamy, V.M., et al. 2015. Selective repression of RET proto-oncogene in medullary thyroid carcinoma by a natural alkaloid berberine. BMC Cancer 15: 599.
5. Kang, Y.M., et al. 2018. Inhibitory effects of bee venom on mast cell-mediated allergic inflammatory responses. Int. J. Mol. Med. 41: 3717-3726.
6. Xing, J., et al. 2019. TRPM7 channel inhibition exacerbates pulmonary arterial hypertension through MEK/ERK pathway. Aging 11: 4050-4065.
7. Chen, H., et al. 2020. TGF-β1/IL-11/MEK/ERK signaling mediates senescence-associated pulmonary fibrosis in a stress-induced premature senescence model of Bmi-1 deficiency. Exp. Mol. Med. 52: 130-151.
8. Kim, I.H., et al. 2020. PYP1-4 peptide from *Pyropia yezoensis* protects against acetaminophen-induced hepatotoxicity in HepG2 cells. Exp. Ther. Med. 19: 849-860.

CONJUGATES

See **MEK-1 (H-8): sc-6250** for MEK-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.