

MEK-5 (21): sc-135986

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 p38 β . 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, Mkk2. *Mol. Cell. Biol.* 13: 4539-4548.
3. Derijard, 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: MAP2K5 (human) mapping to 15q23; Map2k5 (mouse) mapping to 9 C.

SOURCE

MEK-5 (21) is a mouse monoclonal antibody raised against amino acids 13-188 of MEK-5 of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MEK-5 (21) is recommended for detection of MEK-5 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MEK-5 siRNA (h): sc-35911, MEK-5 siRNA (m): sc-35912, MEK-5 shRNA Plasmid (h): sc-35911-SH, MEK-5 shRNA Plasmid (m): sc-35912-SH, MEK-5 shRNA (h) Lentiviral Particles: sc-35911-V and MEK-5 shRNA (m) Lentiviral Particles: sc-35912-V.

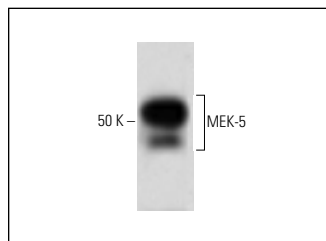
Molecular Weight of MEK-5: 54 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, A-673 cell lysate: sc-2414 or HeLa + serum-starved cell lysate: sc-24693.

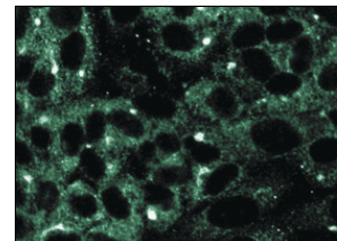
STORAGE

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

DATA



MEK-5 (21): sc-135986. Western blot analysis of MEK-5 expression in Jurkat whole cell lysate.



MEK-5 (21): sc-135986. Immunofluorescence staining of human endothelial cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Simões, A.E., et al. 2015. Aberrant MEK5/ERK5 signalling contributes to human colon cancer progression via NF κ B activation. *Cell Death Dis.* 6: e1718.
2. Pereira, D.M., et al. 2016. MEK5/ERK5 signaling inhibition increases colon cancer cell sensitivity to 5-fluorouracil through a p53-dependent mechanism. *Oncotarget* 7: 34322-34340.
3. Yang, W., et al. 2017. Exploring the mechanism of WWOX growth inhibitory effects on oral squamous cell carcinoma. *Oncol. Lett.* 13: 3198-3204.
4. Pereira, D.M., et al. 2019. MEK5/ERK5 activation regulates colon cancer stem-like cell properties. *Cell Death Discov.* 5: 68.
5. Jo, M., et al. 2019. Inhibition of MEK5 suppresses TDP-43 toxicity via the mTOR-independent activation of the autophagy-lysosome pathway. *Biochem. Biophys. Res. Commun.* 513: 925-932.
6. Cristea, S., et al. 2020. The MEK5-ERK5 kinase axis controls lipid metabolism in small cell lung cancer. *Cancer Res.* 80: 1293-1303.
7. Huang, Y., et al. 2021. Map2k5-deficient mice manifest phenotypes and pathological changes of dopamine deficiency in the central nervous system. *Front. Aging Neurosci.* 13: 651638.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.