

MEK-3 (B-2): sc-376627

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. Dérjard, 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.
5. Han, J., et al. 1996. Characterization of the structure and function of a novel MAP kinase kinase (MKK6). *J. Biol. Chem.* 271: 2886-2891.
6. Jiang, Y., et al. 1996. Characterization of the structure and function of a new mitogen-activated protein kinase (p38 β). *J. Biol. Chem.* 271: 17920-17926.
7. Tournier, C., et al. 1997. Mitogen-activated protein kinase kinase 7 is an activator of the c-Jun NH₂-terminal kinase. *Proc. Natl. Acad. Sci. USA* 94: 7337-7442.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K3 (human) mapping to 17p11.2; Map2k3 (mouse) mapping to 11 B2.

SOURCE

MEK-3 (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 291-320 at the C-terminus of MEK-3 of human origin.

PRODUCT

Each vial contains 200 μ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376627 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

MEK-3 (B-2) is recommended for detection of MEK-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MEK-3 siRNA (h): sc-35907, MEK-3 siRNA (m): sc-35908, MEK-3 shRNA Plasmid (h): sc-35907-SH, MEK-3 shRNA Plasmid (m): sc-35908-SH, MEK-3 shRNA (h) Lentiviral Particles: sc-35907-V and MEK-3 shRNA (m) Lentiviral Particles: sc-35908-V.

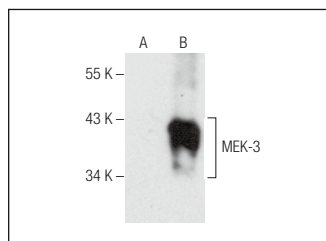
Molecular Weight of MEK-3: 40 kDa.

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

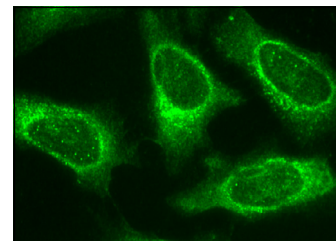
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MEK-3 (B-2): sc-376627. 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 (B-2): sc-376627. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Pranteda, A., et al. 2023. Activated MKK3/MYC crosstalk impairs dabrafenib response in BRAFV600E colorectal cancer leading to resistance. *Biomed. Pharmacother.* 167: 115480.
2. Piastra, V., et al. 2024. Repurposed AT9283 triggers anti-tumoral effects by targeting MKK3 oncogenic functions in colorectal cancer. *J. Exp. Clin. Cancer Res.* 43: 234.

STORAGE

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