SANTA CRUZ BIOTECHNOLOGY, INC.

MEK-3 (5F7): sc-81474

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 ERK 5, 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., Alessandrini, A. and Erikson, R.L. 1992. The primary structure of MEK, a protein kinase that phosphorylates the ERK gene product. Science 258: 478-480.
2. Wu, J., Harrison, J.K., Dent, P., Lynch, K.R., Weber, M.J. and Sturgill, T.W. 1993. Identification and characterization of a new mammalian mitogen-activated protein kinase kinase, MKK2. Mol. Cell. Biol. 13: 4539-4548.
3. Dérijard, B., Raingeaud, J., Barrett, T., Wu, I.H., Han, J., Ulevitch, R.J. and Davis, R.J. 1995. Independent human MAP kinase signal transduction pathways defined by MEK and MKK isoforms. Science 267: 682-685.
4. Zhou, G., Bao, Z.Q. and Dixon, J.E. 1995. Components of a new human protein kinase signal transduction pathway. J. Biol. Chem. 270: 12665-12669.
5. Han, J., Lee, J.D., Jiang, Y., Li, Z., Feng, L. and Ulevitch, R.J. 1996. Characterization of the structure and function of a novel MAP kinase kinase (MKK6). J. Biol. Chem. 271: 2886-2891.
6. Jiang, Y., Chen, C., Li, Z., Guo, W., Gegner, J.A., Lin, S. and Han, J. 1996. Characterization of the structure and function of a new mitogen-activated protein kinase (p38β). J. Biol. Chem. 271: 17920-17926.
7. Tournier, C., Whitmarsh, A.J., Cavanagh, J., Barrett, T. and Davis, R.J. 1997. Mitogen-activated protein kinase kinase 7 is an activator of the c-Jun NH_2-terminal kinase. Proc. Natl. Acad. Sci. USA 94: 7337-7342.
8. Holland, P.M., Suzanne, M., Campbell, J.S., Noselli, S. and Cooper, J.A. 1997. MKK7 is a stress-activated mitogen-activated protein kinase kinase functionally related to hemipterous. J. Biol. Chem. 272: 24994-24998.
9. Wu, Z., Wu, J., Jacinto, E. and Karin, M. 1997. Molecular cloning and characterization of human JNKK2, a novel Jun NH_2-terminal kinase-specific kinase. Mol. Cell. Biol. 17: 7407-7416.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K3 (human) mapping to 17q11.2; Map2k3 (mouse) mapping to 11 B2.

SOURCE

MEK-3 (5F7) is a mouse monoclonal antibody raised against the N-terminus of MEK-3 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

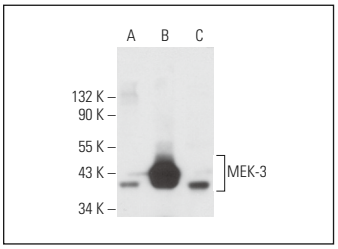
MEK-3 (5F7) is recommended for detection of MEK-3 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MEK-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.

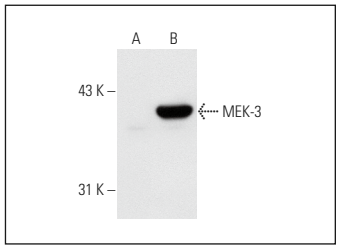
Molecular Weight of MEK-3: 40 kDa.

Positive Controls: MEK-3 (h2): 293T Lysate: sc-176353, Jurkat whole cell lysate: sc-2204 or NIH/3T3 whole cell lysate: sc-2210.

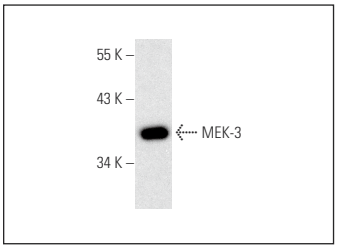
DATA



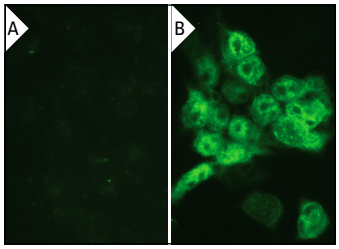
MEK-3 (5F7): sc-81474. Western blot analysis of MEK-3 expression in non-transfected 293: sc-110760 (**A**), human MEK-3 transfected 293: sc-158720 (**B**) and Jurkat (**C**) whole cell lysates.



MEK-3 (5F7): sc-81474. Western blot analysis of MEK-3 expression in non-transfected: sc-117752 (**A**) and human MEK-3 transfected: sc-176353 (**B**) 293T whole cell lysates.



MEK-3 (5F7): sc-81474. Western blot analysis of MEK-3 expression in NIH/3T3 whole cell lysate.



MEK-3 (5F7): sc-81474. Immunofluorescence staining of methanol-fixed untransfected (**A**) and human MEK-3 transfected HEK 293T cells (**B**).

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.