

# MEK-4 (54): sc-136314

## 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 $\beta$ . 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. 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 $\beta$ ). *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 NH<sub>2</sub>-terminal kinase. *Proc. Natl. Acad. Sci. USA* 94: 7337-7442.
8. Holland, P.M., et al. 1997. MKK-7 is a stress-activated mitogen-activated protein kinase kinase functionally related to hemipterous. *J. Biol. Chem.* 272: 24994-24998.
9. Wu, Z., et al. 1997. Molecular cloning and characterization of human JNKK2, a novel Jun NH<sub>2</sub>-terminal kinase-specific kinase. *Mol. Cell. Biol.* 17: 7407-7416.

## CHROMOSOMAL LOCATION

Genetic locus: MAP2K4 (human) mapping to 17p12; Map2k4 (mouse) mapping to 11 B3.

## SOURCE

MEK-4 (54) is a mouse monoclonal antibody raised against amino acids 1-128 of MEK-4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

MEK-4 (54) is recommended for detection of MEK-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000); not recommended for immunoprecipitation.

MEK-4 (54) is also recommended for detection of MEK-4 in additional species, including canine.

Suitable for use as control antibody for MEK-4 siRNA (h): sc-35909, MEK-4 siRNA (m): sc-35910, MEK-4 shRNA Plasmid (h): sc-35909-SH, MEK-4 shRNA Plasmid (m): sc-35910-SH, MEK-4 shRNA (h) Lentiviral Particles: sc-35909-V and MEK-4 shRNA (m) Lentiviral Particles: sc-35910-V.

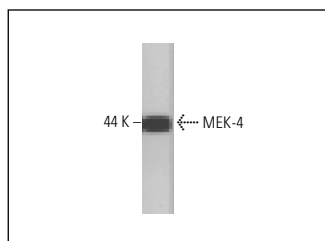
Molecular Weight of MEK-4: 45 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, U-251-MG whole cell lysate: sc-364176 or rat brain extract: sc-2392.

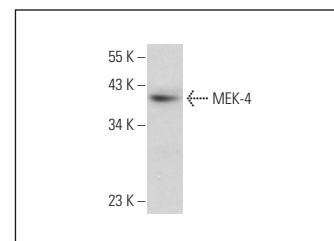
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



MEK-4 (54): sc-136314. Western blot analysis of MEK-4 expression in rat brain tissue extract.



MEK-4 (54): sc-136314. Western blot analysis of MEK-4 expression in U-251-MG whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Zhu, Y., et al. 2018. MicroRNA-136 inhibits prostate cancer cell proliferation and invasion by directly targeting mitogen-activated protein kinase kinase 4. *Mol. Med. Rep.* 17: 4803-4810.

## 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. Not for resale.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.