SANTA CRUZ BIOTECHNOLOGY, INC.

p-MEK-1 (Thr 291): sc-101733

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. Phosphorylation on Ser/Thr by MAP kinase kinase kinases (RAF or MEKK1) positively regulates the kinase activity.

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.
5. Han, J., et al. 1996. Characterization of the structure and function of a novel MAP kinase kinse (MKK6). J. Biol. Chem. 271: 2886-2891.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K1 (human) mapping to 15q22.31; Map2k1 (mouse) mapping to 9 C.

SOURCE

p-MEK-1 (Thr 291) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 291 phosphorylated MEK-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

PROTOCOLS

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

APPLICATIONS

p-MEK-1 (Thr 291) is recommended for detection of Thr 291 phosphorylated MEK-1 of mouse, rat and human 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)].

Suitable for use as control antibody for MEK-1 siRNA (h): sc-29396, MEK-1 siRNA (m): sc-35904, MEK-1 shRNA Plasmid (h): sc-29396-SH, MEK-1 shRNA Plasmid (m): sc-35904-SH, MEK-1 shRNA (h) Lentiviral Particles: sc-29396-V and MEK-1 shRNA (m) Lentiviral Particles: sc-35904-V.

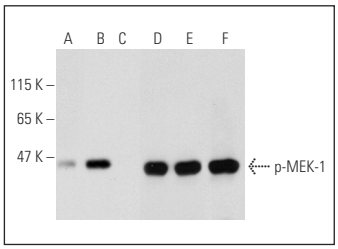
Molecular Weight of p-MEK-1: 45 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, PC-12 cell lysate: sc-2250 or HEK293 whole cell lysate.

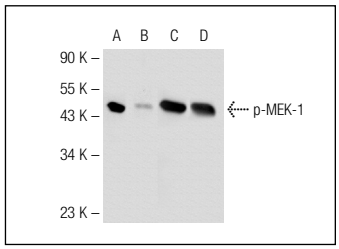
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of MEK-1 phosphorylation in untreated (**A**,**D**), NGF treated (**B**,**E**) and NGF and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) PC-12 whole cell lysates. Antibodies tested include p-MEK-1 (Thr 291): sc-101733 (**A**,**B**,**C**) and MEK-1 (H-8): sc-6250 (**D**,**E**,**F**).



Western blot analysis of MEK-1 phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) KNRK whole cell lysates. Antibodies tested include p-MEK-1 (Thr 291): sc-101733 (**A**,**B**) and MEK-1 (C-18): sc-219 (**C**,**D**).

SELECT PRODUCT CITATIONS

1. Ying, M., et al. 2013. Bortezomib sensitizes human acute myeloid leukemia cells to all-*trans*-retinoic acid-induced differentiation by modifying the RARα/STAT1 axis. Mol. Cancer Ther. 12: 195-206.