SANTA CRUZ BIOTECHNOLOGY, INC.

p-MEK-1/2 (Ser 218/Ser 222): sc-7995

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 ERK 5, 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 (RAFor MEKK1) positively regulates the kinase activity.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K1 (human) mapping to 15q22.31, MAP2K2 (human) mapping to 19p13.3; Map2k1 (mouse) mapping to 9 C, Map2k2 (mouse) mapping to 10 C1.

SOURCE

p-MEK-1/2 (Ser 218/Ser 222) is available as either goat (sc-7995) or rabbit (sc-7995-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 218 and Ser 222 phosphorylated MEK-1 of human origin.

PRODUCT

Each vial contains either 100 µg (sc-7995) or 200 µg (sc-7995-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7995 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose (sc-7995 AC) conjugate for immunoprecipitation, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

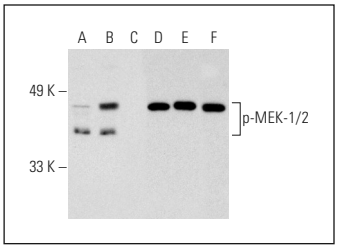
p-MEK-1/2 (Ser 218/Ser 222) is recommended for detection of MEK-1 dually phosphorylated at Ser 218 and Ser 222 and correspondingly phosphorylated MEK-2 of mouse, rat, human, *Drosophila melanogaster* and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). p-MEK-1/2 (Ser 218/Ser 222) is also recommended for detection of correspondingly phosphorylated MEK-1 and MEK-2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MEK-1 siRNA (m): sc-35904, MEK-2 siRNA (h): sc-35905, MEK-1 shRNA Plasmid (m): sc-35904-SH, MEK-2 shRNA Plasmid (h): sc-35905-SH, MEK-1 shRNA (m) Lentiviral Particles: sc-35904-V and MEK-2 shRNA (h) Lentiviral Particles: sc-35905-V.

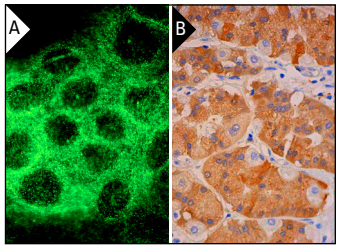
STORAGE

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

DATA



Western blot analysis of MEK-1/2 phosphorylation in untreated (**A**,**D**), serum starved and PMA treated (**B**,**E**) and serum starved, PMA treated and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-MEK-1/2 (Ser 218/Ser 222)-R: sc-7995-R (**A**,**B**,**C**) and MEK-1 (H-8): sc-6250 (**D**,**E**,**F**).



p-MEK-1/2 (Ser 218/Ser 222): sc-7995. Immunofluorescence staining of methanol-fixed SCC-4 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Sato, S., et al. 2004. Involvement of 3-phosphoinositide-dependent protein kinase-1 in the MEK/MAPK signal transduction pathway. J. Biol. Chem. 279: 33759-33767.
2. Gao, J., et al. 2011. Curcumin inhibits renal cyst formation and enlargement *in vitro* by regulating intracellular signaling pathways. Eur. J. Pharmacol. 654: 92-99.
3. Chen, G., et al. 2011. Distinctive mechanism for sustained TGF-β signaling and growth inhibition: MEK1 activation-dependent stabilization of type II TGF-β receptors. Mol. Cancer Res. 9: 78-89.
4. Sasaki, K., et al. 2011. The role of MAPK pathway in bone and soft tissue tumors. Anticancer Res. 31: 549-553.
5. Jang, J.Y., et al. 2011. Partially purified components of *Nardostachys chinensis* suppress melanin synthesis through ERK and Akt signaling pathway with cAMP down-regulation in B16F10 cells. J. Ethnopharmacol. 137: 1207-1214.
6. Huang, T.Y., et al. 2012. Effect of sulforaphane on growth inhibition in human brain malignant glioma GBM 8401 cells by means of mitochondrial- and MEK/ERK-mediated apoptosis pathway. Cell Biochem. Biophys. 63: 247-259.

RESEARCH USE

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