SANTA CRUZ BIOTECHNOLOGY, INC.

MKP-1 (H-66): sc-10796

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A key element in the pathway involved in the transduction of signals from activated protein-tyrosine kinase transmembrane receptors has been identified as the family of mitogen-activated protein kinases (MAP kinases). The most well known of these Ser/Thr kinases are ERK 1 and ERK 2. Mitogenic stimulation of cells triggers the activation of MAP kinases through phosphorylation of both tyrosyl (Y185) and threonyl (T183) residues. Phosphorylation of the T183 and Y185 ERK regulatory site is mediated by MAP kinase (MEK), which in turn is regulated by the proto-oncogene product Raf. Two highly related phosphatases, designated MKP-1 and MKP-2, exhibit 59% sequence identity at the amino acid level and oppose the action of MEK by downregulating the kinase activity of ERK 1 and ERK 2. MAP kinase phosphatase-1 and -2 proteins function by dephosphorylating ERK 1 and ERK 2 at their T-E-Y regulatory motif. An additional phosphatase encoded by the DUSP2 gene, designated PAC-1, also functions to downregulate ERK 1 and ERK 2 kinase activity. PAC-1 is a nuclear protein whose expression is strongly induced in response to mitogen.

CHROMOSOMAL LOCATION

Genetic locus: DUSP1 (human) mapping to 5q35.1; Dusp1 (mouse) mapping to 17 A3.3.

SOURCE

MKP-1 (H-66) is a rabbit polyclonal antibody raised against amino acids 57-122 mapping near the N-terminus of MKP-1 (MAP kinase phosphatase-1) of human origin.

PRODUCT

Each vial contains 200 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.

APPLICATIONS

MKP-1 (H-66) is recommended for detection of MKP-1 of mouse, rat and human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MKP-1 (H-66) is also recommended for detection of MKP-1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for MKP-1 siRNA (h): sc-35937, MKP-1 siRNA (m): sc-35938, MKP-1 shRNA Plasmid (h): sc-35937-SH, MKP-1 shRNA Plasmid (m): sc-35938-SH, MKP-1 shRNA (h) Lentiviral Particles: sc-35937-V and MKP-1 shRNA (m) Lentiviral Particles: sc-35938-V.

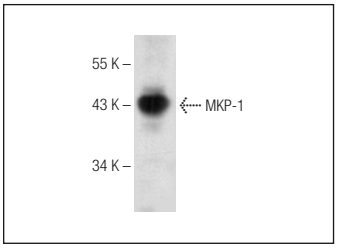
Molecular Weight of MKP-1: 40 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

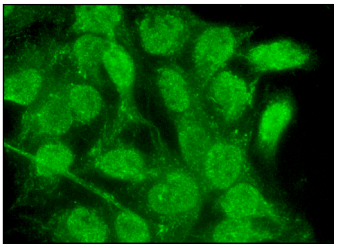
RECOMMENDED SECONDARY REAGENTS

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 A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MKP-1 (H-66): sc-10796. Western blot analysis of MKP-1 expression in Hep G2 whole cell lysate.



MKP-1 (H-66): sc-10796. Immunofluorescence staining of methanol-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Bove, P.F., et al. 2008. Inflammatory levels of nitric oxide inhibit airway epithelial cell migration by inhibition of the kinase ERK 1/2 and activation of hypoxia-inducible factor-1 α. J. Biol. Chem. 283: 17919-17928.
2. González-Fernández, L., et al. 2009. Identification of protein tyrosine phosphatases and dual-specificity phosphatases in mammalian spermatozoa and their role in sperm motility and protein tyrosine phosphorylation. Biol. Reprod. 80: 1239-1252.
3. Lamon, B.D., et al. 2010. Inducible nitric oxide synthase gene deletion exaggerates MAPK-mediated cyclooxygenase-2 induction by inflammatory stimuli. Am. J. Physiol. Heart Circ. Physiol. 299: H613-H623.

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.