

MKP-1 (E-6): sc-373841

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 (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 321-365 near the C-terminus of MKP-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MKP-1 (E-6) is available conjugated to agarose (sc-373841 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373841 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373841 PE), fluorescein (sc-373841 FITC), Alexa Fluor® 488 (sc-373841 AF488), Alexa Fluor® 546 (sc-373841 AF546), Alexa Fluor® 594 (sc-373841 AF594) or Alexa Fluor® 647 (sc-373841 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373841 AF680) or Alexa Fluor® 790 (sc-373841 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373841 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

PROTOCOLS

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

APPLICATIONS

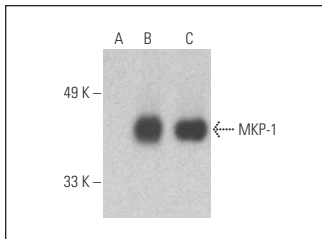
MKP-1 (E-6) is recommended for detection of MKP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MKP-1 siRNA (h): sc-35937, MKP-1 siRNA (m): sc-35938, MKP-1 siRNA (r): sc-156163, MKP-1 shRNA Plasmid (h): sc-35937-SH, MKP-1 shRNA Plasmid (m): sc-35938-SH, MKP-1 shRNA Plasmid (r): sc-156163-SH, MKP-1 shRNA (h) Lentiviral Particles: sc-35937-V, MKP-1 shRNA (m) Lentiviral Particles: sc-35938-V and MKP-1 shRNA (r) Lentiviral Particles: sc-156163-V.

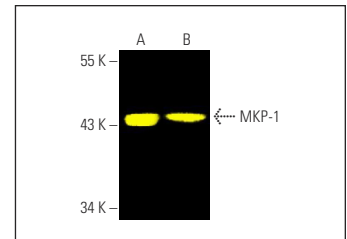
Molecular Weight of MKP-1: 40 kDa.

Positive Controls: MKP-1 (m): 293T Lysate: sc-121680, A-10 cell lysate: sc-3806 or c4 whole cell lysate: sc-364186.

DATA



MKP-1 (E-6): sc-373841. Western blot analysis of MKP-1 expression in non-transfected 293T: sc-117752 (A), mouse MKP-1 transfected 293T: sc-121680 (B) and A-10 (C) whole cell lysates.



MKP-1 (E-6) Alexa Fluor® 488: sc-373841 AF488. Direct fluorescent western blot analysis of MKP-1 expression in HeLa (A) and c4 (B) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

- McGuire, V.A., et al. 2016. β interferon production is regulated by p38 mitogen-activated protein kinase in macrophages via both MSK1/2- and tristetraprolin-dependent pathways. *Mol. Cell. Biol.* 37: e00454-16.
- Ji, J., et al. 2020. Protective effects of rolipram on endotoxic cardiac dysfunction via inhibition of the inflammatory response in cardiac fibroblasts. *BMC Cardiovasc. Disord.* 20: 242.
- Horvath, O., et al. 2021. BGP-15 protects against heart failure by enhanced mitochondrial biogenesis and decreased fibrotic remodelling in spontaneously hypertensive rats. *Oxid. Med. Cell. Longev.* 2021: 1250858.
- Kubota, H., et al. 2022. Repeated social defeat enhances CaCl₂-induced abdominal aortic aneurysm expansion by inhibiting the early fibrotic response via the MAPK-MKP-1 pathway. *Cells* 11: 732.
- Xuan, C., et al. 2023. Glutamine ameliorates hyperoxia-induced hippocampal damage by attenuating inflammation and apoptosis via the MKP-1/MAPK signaling pathway in neonatal rats. *Front. Pharmacol.* 14: 1096309.

RESEARCH USE

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