

MKP-3 (H-130): sc-28902

BACKGROUND

Mitogen-activated protein (MAP) kinases are a large class of proteins involved in signal transduction pathways that are activated by a range of stimuli and mediate a number of physiological and pathological changes in the cell. Dual specificity phosphatases (DSPs) are a subclass of the protein tyrosine phosphatase (PTP) gene superfamily, which are selective for dephosphorylating critical phosphothreonine and phosphotyrosine residues within MAP kinases. DSP gene expression is induced by a host of growth factors and/or cellular stresses, thereby negatively regulating MAP kinase superfamily members including MAPK/ERK, SAPK/JNK and p38. The members of the dual-specificity phosphatase protein family include MKP-1/CL100 (3CH134), VHR, PAC1, MKP-2, hVH-3 (B23), hVH-5, MKP-3, MKP-X, and MKP-4. Human MKP-3 maps to chromosome 12q21.33 and encodes a 381 amino acid protein that specifically inactivates members of the ERK family and is expressed in a variety of tissues with the highest levels in heart and pancreas.

CHROMOSOMAL LOCATION

Genetic locus: DUSP6 (human) mapping to 12q21.33, DUSP7 (human) mapping to 3p21.2; Dusp6 (mouse) mapping to 10 D1, Dusp7 (mouse) mapping to 9 F1.

SOURCE

MKP-3 (H-130) is a rabbit polyclonal antibody raised against amino acids 1-130 mapping at the N-terminus of MKP-3 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.

RESEARCH USE

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

APPLICATIONS

MKP-3 (H-130) is recommended for detection of MKP-3 and, to a lesser extent, dual specificity phosphatase 7 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), 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).

MKP-3 (H-130) is also recommended for detection of MKP-3 and, to a lesser extent, dual specificity phosphatase 7 in additional species, including equine, canine, bovine and avian.

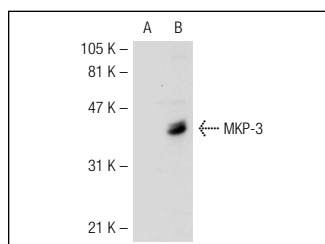
Molecular Weight of MKP-3: 42 kDa.

Positive Controls: MKP-3 (h): 293T Lysate: sc-114251.

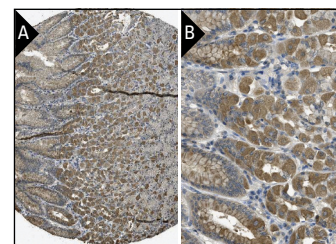
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



MKP-3 (H-130): sc-28902. Western blot analysis of MKP-3 expression in non-transfected: sc-117752 (A) and human MKP-3 transfected: sc-114251 (B) 293T whole cell lysates.



MKP-3 (H-130): sc-28902. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic and membrane staining of glandular cells at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

- Modesti, P.A., et al. 2008. Impaired angiotensin II-extracellular signal-regulated kinase signaling in failing human ventricular myocytes. *J. Hypertens.* 26: 2030-2039.
- Sen, A., et al. 2008. Cocaine- and amphetamine-regulated transcript accelerates termination of follicle-stimulating hormone-induced extracellularly regulated kinase 1/2 and Akt activation by regulating the expression and degradation of specific mitogen-activated protein kinase phosphatases in bovine granulosa cells. *Mol. Endocrinol.* 22: 2655-2676.
- Whetzel, A.M., et al. 2009. Sphingosine-1-phosphate inhibits high glucose-mediated ERK 1/2 action in endothelium through induction of MAP kinase phosphatase-3. *Am. J. Physiol., Cell Physiol.* 296: C339-C345.
- Junttila, M.R., et al. 2010. Selective activation of p53-mediated tumour suppression in high-grade tumours. *Nature* 468: 567-571.
- Casar, B., et al. 2012. Mxi2 sustains ERK1/2 phosphorylation in the nucleus by preventing ERK1/2 binding to phosphatases. *Biochem. J.* 441: 571-578.
- Falco, A., et al. 2012. BAG3 controls angiogenesis through regulation of ERK phosphorylation. *Oncogene* 31: 5153-5161.
- Li, G., et al. 2012. Decline in miR-181a expression with age impairs T cell receptor sensitivity by increasing DUSP6 activity. *Nat. Med.* 18: 1518-1524.