

# MKP-7 (H-44): sc-98872

## 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 (DUSPs) are a subclass of the protein tyrosine phosphatase (PTP) gene superfamily, which are selective for dephosphorylating critical phosphothreonine and phosphotyrosine residues within MAP kinases. DUSP 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. MKP-7 binds to and inactivates p38 MAPK isoforms  $\alpha$  and  $\beta$ , and JNK/SAPK, but not ERK. ERK phosphorylates MKP-7 on Ser 446, thereby stabilizing the protein and blocking JNK activation. MKP-7 is predominantly localized in the cytoplasm, but becomes exclusively nuclear following leptomycin B treatment.

## REFERENCES

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4. Masuda, K., Shima, H., Watanabe, M. and Kikuchi, K. 2001. MKP-7, a novel mitogen-activated protein kinase phosphatase, functions as a shuttle protein. *J. Biol. Chem.* 276: 39002-39011.
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7. Katagiri, C., Masuda, K., Urano, T., Yamashita, K., Araki, Y., Kikuchi, K. and Shima, H. 2005. Phosphorylation of Ser-446 determines stability of MKP-7. *J. Biol. Chem.* 280: 14716-14722.

## CHROMOSOMAL LOCATION

Genetic locus: DUSP16 (human) mapping to 12p13.2; Dusp16 (mouse) mapping to 6 G1.

## SOURCE

MKP-7 (H-44) is a rabbit polyclonal antibody raised against amino acids 501-544 mapping near the C-terminus of MKP-7 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

MKP-7 (H-44) is recommended for detection of MKP-7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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-7 (H-44) is also recommended for detection of MKP-7 in additional species, including equine, canine and avian.

Suitable for use as control antibody for MKP-7 siRNA (h): sc-61052, MKP-7 siRNA (m): sc-61053, MKP-7 shRNA Plasmid (h): sc-61052-SH, MKP-7 shRNA Plasmid (m): sc-61053-SH, MKP-7 shRNA (h) Lentiviral Particles: sc-61052-V and MKP-7 shRNA (m) Lentiviral Particles: sc-61053-V.

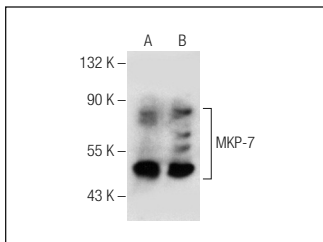
Molecular Weight of MKP-7: 73 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

## 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-7 (H-44): sc-98872. Western blot analysis of MKP-7 expression in HeLa (A) and Jurkat (B) whole cell lysates.

## 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.