

# MKP-7 (G-14): sc-47905

## 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.
5. Hoornaert, I., Marynen, P., Goris, J., Sciote, R. and Baens, M. 2003. MAPK phosphatase DUSP16/MKP-7, a candidate tumor suppressor for chromosome region 12p12-13, reduces BCR-ABL-induced transformation. *Oncogene* 22: 7728-7736.
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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* (mouse) mapping to 6 G1.

## SOURCE

MKP-7 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MKP-7 of mouse origin.

## STORAGE

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

## PRODUCT

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

Blocking peptide available for competition studies, sc-47905 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MKP-7 (G-14) is recommended for detection of MKP-7 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

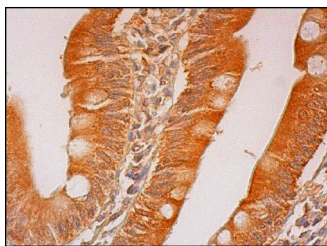
Suitable for use as control antibody for MKP-7 siRNA (m): sc-61053, MKP-7 shRNA Plasmid (m): sc-61053-SH and MKP-7 shRNA (m) Lentiviral Particles: sc-61053-V.

Molecular Weight of MKP-7: 73 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

## DATA



MKP-7 (G-14): sc-47905. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic and nuclear staining of glandular cells.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.