

# MKP-5 (D-17): sc-47664

## 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. MKP-5 preferentially binds to p38, but also to SAPK/JNK. It is ubiquitously expressed and localizes to both the cytoplasm and the nucleus. MKP-5 has been implicated in cell proliferation and apoptosis, tumor invasion and immune responses.

## REFERENCES

1. Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. *Biochim. Biophys. Acta* 1265: 152-160.
2. Sun, H. 1998. Functional studies of dual-specificity phosphatases. *Methods Mol. Biol.* 84: 307-318.
3. Tanoue, T., Moriguchi, T. and Nishida, E. 1999. Molecular cloning and characterization of a novel dual specificity phosphatase, MKP-5. *J. Biol. Chem.* 274: 19949-19956.
4. Camps, M., Nichols, A. and Arkinstall, S. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. *FASEB J.* 14: 6-16.
5. Masuda, K., Shima, H., Kikuchi, K., Watanabe, Y. and Matsuda, Y. 2000. Expression and comparative chromosomal mapping of MKP-5 genes DUSP10/Dusp10. *Cytogenet. Cell Genet.* 90: 71-74.
6. Theodosiou, A., Smith, A., Gillieron, C., Arkinstall, S. and Ashworth, A. 2000. dephosphorylates stress-activated kinases. *Oncogene* 18: 6981-6988.

## CHROMOSOMAL LOCATION

Genetic locus: DUSP10 (human) mapping to 1q41; Dusp10 (mouse) mapping to 1 H5.

## SOURCE

MKP-5 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MKP-5 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.

Blocking peptide available for competition studies, sc-47664 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

MKP-5 (D-17) is recommended for detection of MKP-5 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-5 (D-17) is also recommended for detection of MKP-5 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for MKP-5 siRNA (h): sc-61048, MKP-5 siRNA (m): sc-61049, MKP-5 shRNA Plasmid (h): sc-61048-SH, MKP-5 shRNA Plasmid (m): sc-61049-SH, MKP-5 shRNA (h) Lentiviral Particles: sc-61048-V and MKP-5 shRNA (m) Lentiviral Particles: sc-61049-V.

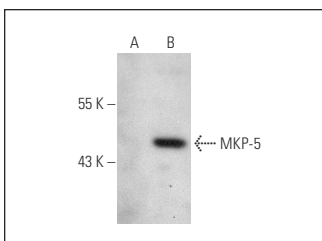
Molecular Weight of MKP-5: 53 kDa.

Positive Controls: MKP-5 (h3): 293T Lysate: sc-176156.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



MKP-5 (D-17): sc-47664. Western blot analysis of MKP-5 expression in non-transfected: sc-117752 (A) and human MKP-5 transfected: sc-176156 (B) 293T whole cell lysates.

## RESEARCH USE

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



Try **MKP-5 (G-10): sc-374276**, our highly recommended monoclonal alternative to MKP-5 (D-17).