

# MKP-5 (G-10): sc-374276

## 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., et al. 1999. Molecular cloning and characterization of a novel dual specificity phosphatase, MKP-5. *J. Biol. Chem.* 274: 19949-19956.
4. Theodosiou, A., et al. 1999. MKP-5, a new member of the MAP kinase phosphatase family, which selectively dephosphorylates stress-activated kinases. *Oncogene* 18: 6981-6988.
5. Camps, M., et al. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. *FASEB J.* 14: 6-16.
6. Masuda, K., et al. 2000. Expression and comparative chromosomal mapping of MKP-5 genes DUSP10/Dusp10. *Cytogenet. Cell Genet.* 90: 71-74.

## CHROMOSOMAL LOCATION

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

## SOURCE

MKP-5 (G-10) is a mouse monoclonal antibody raised against amino acids 1-205 mapping at the N-terminus of MKP-5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MKP-5 (G-10) is available conjugated to agarose (sc-374276 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374276 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374276 PE), fluorescein (sc-374276 FITC), Alexa Fluor® 488 (sc-374276 AF488), Alexa Fluor® 546 (sc-374276 AF546), Alexa Fluor® 594 (sc-374276 AF594) or Alexa Fluor® 647 (sc-374276 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374276 AF680) or Alexa Fluor® 790 (sc-374276 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

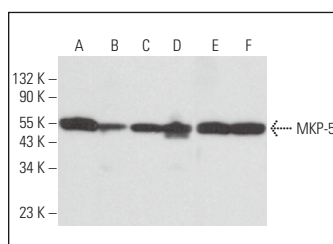
MKP-5 (G-10) is recommended for detection of MKP-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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-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.

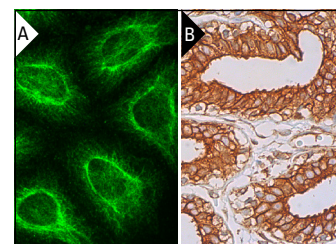
Molecular Weight of MKP-5: 53 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, 3T3-L1 cell lysate: sc-2243 or WEHI-231 whole cell lysate: sc-2213.

## DATA



MKP-5 (G-10): sc-374276. Western blot analysis of MKP-5 expression in HeLa (A), 3T3-L1 (B), WEHI-231 (C), TT (D), DU 145 (E) and PC-3 (F) whole cell lysates.



MKP-5 (G-10): sc-374276. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and membrane staining of glandular cells and myoepithelial cells (B).

## SELECT PRODUCT CITATIONS

1. Zhou, W., et al. 2022. MiRNA-363-3p/DUSP10/JNK axis mediates chemoresistance by enhancing DNA damage repair in diffuse large B-cell lymphoma. *Leukemia* 36: 1861-1869.
2. Yu, Q., et al. 2024. 6-Gingerol attenuates hepatic ischemia/reperfusion injury through regulating MKP5-mediated P38/JNK pathway. *Sci. Rep.* 14: 7747.

## 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.

## PROTOCOLS

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