SANTA CRUZ BIOTECHNOLOGY, INC.

MKP-5 (H-205): sc-135201

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: 307-18.
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. Camps, M., et al. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. FASEB J. 14: 6-16.
5. Masuda, K., et al. 2000. Expression and comparative chromosomal mapping of MKP-5 genes DUSP10/Dusp10. Cytogenet. Cell Genet. 90: 71-74.
6. Theodosiou, A., et al. 2000. MKP5, a new member of the MAP kinase phosphatase family, which selectively dephosphorylates stress-activated kinases. Oncogene 18: 6981-6988.
7. Bar-Shira, A., et al. 2002. Atm-dependent activation of the gene encoding MAP kinase phosphatase 5 by radiomimetic DNA damage. Oncogene 21: 849-855.
8. Chen, L., et al. 2004. ERK 1/2 and p38 pathways are required for P2Y receptor-mediated prostate cancer invasion. Cancer Lett. 215: 239-247.
9. Zhang, Y., et al. 2004. Regulation of innate and adaptive immune responses by MAP kinase phosphatase 5. Nature 430: 793-797.

CHROMOSOMAL LOCATION

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

SOURCE

MKP-5 (H-205) is a rabbit polyclonal 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 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MKP-5 (H-205) 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 (H-205) is also recommended for detection of MKP-5 in additional species, including equine, canine, 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.

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.

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 or our catalog for detailed protocols and support products.