SANTA CRUZ BIOTECHNOLOGY, INC.

MKP-7 (S-14): sc-47907

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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3. Tanoue, T., Yamamoto, T., Maeda, R. and Nishida, E. 2001. A Novel MAPK phosphatase MKP-7 acts preferentially on JNK/SAPK and p38 α and β MAPKs. J. Biol. Chem. 276: 26629-26639.
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; Dusp16 (mouse) mapping to 6 G1.

SOURCE

MKP-7 (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MKP-7 of human 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 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-47907 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MKP-7 (S-14) is recommended for detection of MKP-7 of 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).

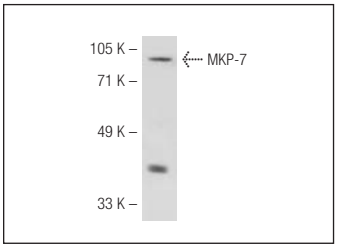
Suitable for use as control antibody for MKP-7 siRNA (h): sc-61052, MKP-7 shRNA Plasmid (h): sc-61052-SH and MKP-7 shRNA (h) Lentiviral Particles: sc-61052-V.

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 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-7 (S-14): sc-47907. Western blot analysis of MKP-7 expression in HeLa whole cell lysate.

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.