SANTA CRUZ BIOTECHNOLOGY, INC.

MKP-6 (4B5-E6): sc-517023

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The deduced 198 amino acid MAP kinase phosphatase 6 (MKP-6), also designated MAP6 and dual-specificity phosphatase 14 (DUSP14), is homologous to other MKP family proteins in that it has a conserved, centrally located, catalytic core, but differs from traditional MKP proteins because it contains unique N- and C-terminal regions. Binding and deletion analyses have established that the interaction between the cytoplasmic tail of CD28 (a T cell antigen) and MKP-6 occurs at Tyr 200 of CD28 and is specific for both MKP-6 and CD28; however, Tyr 200 can be mutated to Phe 200 without a loss of binding ability. Functional analysis indicates that MKP-6 dephosphorylates ERK, JNK and p38 while acting as a negative regulator of CD28 signaling. MKP-6 is expressed ubiquitously, although expression is stronger in certain cell types and tissues than in others.

REFERENCES

1. Tanoue, T., et al. 2001. A Novel MAPK phosphatase MKP-7 acts preferentially on JNK/SAPK and p38 α and β MAPKs. J. Biol. Chem. 276: 26629-26639.
2. Marti, F., et al. 2001. Negative-feedback regulation of CD28 costimulation by a novel mitogen-activated protein kinase phosphatase, MKP-6. J. Immunol. 166: 197-206.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606618. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Nyati, M.K., et al. 2006. Ataxia telangiectasia mutated down-regulates phospho-extracellular signal-regulated kinase 1/2 via activation of MKP-1 in response to radiation. Cancer Res. 66: 11554-11559.
5. Nakano, Y. 2007. Novel function of DUSP14/MKP-6 (dual specific phosphatase 14) as a nonspecific regulatory molecule for delayed-type hypersensitivity. Br. J. Dermatol. 156: 848-860.
6. Klinger, S., et al. 2008. Increasing GLP-1-induced β cell proliferation by silencing the negative regulators of signaling cAMP response element modulator-α and DUSP14. Diabetes 57: 584-593.
7. Elass, E., et al. 2008. Mycobacterial lipomannan induces MAP kinase phosphatase-1 expression in macrophages. FEBS Lett. 582: 445-450.

CHROMOSOMAL LOCATION

Genetic locus: DUSP14 (human) mapping to 17q12.

SOURCE

MKP-6 (4B5-E6) is a mouse monoclonal antibody raised against amino acids 1-198 representing full length MKP-6 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

MKP-6 (4B5-E6) is recommended for detection of MKP-6 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).

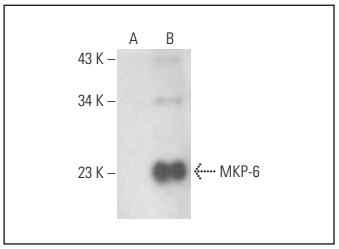
Suitable for use as control antibody for MKP-6 siRNA (h): sc-61050, MKP-6 shRNA Plasmid (h): sc-61050-SH and MKP-6 shRNA (h) Lentiviral Particles: sc-61050-V.

Molecular Weight of MKP-6: 26 kDa.

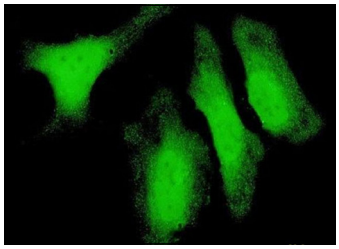
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MKP-6 (4B5-E6): sc-517023. Western blot analysis of MKP-6 expression in non-transfected: sc-117752 (**A**) and mouse MKP-6 transfected: sc-125622 (**B**) whole cell lysates.



MKP-6 (4B5-E6); sc-517023. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.