SANTA CRUZ BIOTECHNOLOGY, INC.

PAC-1 (A-19): sc-1622

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. The members of the dual-specificity phosphatase protein family include MKP-1/CL100 (3CH134), VHR, PAC-1, MKP-2, hVH-3 (B23), hVH-5, MKP-3, MKP-X, and MKP-4. Human PAC-1 maps to chromosome 2q11 and encodes a 314 amino acid, mitogen-induced protein.

REFERENCES

1. Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. Biochim. Biophys. Acta 1265: 152-160.
2. Grumont, R.J., et al. 1996. Activation of the mitogen-activated protein kinase pathway induces transcription of the PAC-1 phosphatase gene. Mol. Cell. Biol. 16: 2913-2921.
3. Muda, M., et al. 1997. Molecular cloning and functional characterization of a novel mitogen-activated protein kinase phosphatase, MKP-4. J. Biol. Chem. 272: 5141-5151.
4. Sun, H. 1998. Functional studies of dual-specificity phosphatases. Methods Mol. Biol. 84: 307-318.
5. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 603068. World Wide Web URL: http://www.ncbi.nlm. nih.gov/omim/
6. Camps, M., et al. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. FASEB J. 14: 6-16.
7. Kothapalli, R., et al. 2003. Characterization of a variant of PAC-1 in large granular lymphocyte leukemia. Protein Expr. Purif. 32: 52-60.

CHROMOSOMAL LOCATION

Genetic locus: Dusp2 (mouse) mapping to 2 F1.

SOURCE

PAC-1 (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PAC-1 of mouse 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-1622 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

PAC-1 (A-19) is recommended for detection of PAC-1 of mouse and rat 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 PAC-1 siRNA (m): sc-39005, PAC-1 shRNA Plasmid (m): sc-39005-SH and PAC-1 shRNA (m) Lentiviral Particles: sc-39005-V.

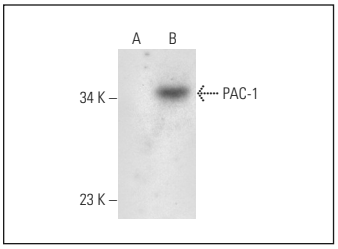
Molecular Weight of PAC-1: 32 kDa.

Positive Controls: PAC-1 (m): 293T Lysate: sc-127288.

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



PAC-1 (A-19): sc-1622. Western blot analysis of PAC-1 expression in non-transfected: sc-117752 (**A**) and mouse PAC-1 transfected: sc-127288 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yoshida, N.L., et al. 2002. Analysis of gene expression patterns during glucocorticoid-induced apoptosis using oligonucleotide arrays. Biochem. Biophys. Res. Commun. 293: 1254-1261.

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 or our catalog for detailed protocols and support products.