SANTA CRUZ BIOTECHNOLOGY, INC.

PIR1 (S-18): sc-47922

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 (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. One member of this subfamily PIR1 (phosphatase that interacts with RNA/RNP complex 1, also designated Dual specificity protein phosphatase 11) removes two phosphates from the 5'-triphosphate end of RNA, but not from mononucleotide triphosphates. PIR1 interacts with splicing factors 9G8 and SRp30C, and may participate in nuclear mRNA metabolism.

REFERENCES

1. Toh-e, A., Yasunaga, S., Nisogi, H., Tanaka, K., Oguchi, T. and Matsui, Y. 1993. Three yeast genes, PIR1, PIR2 and PIR3, containing internal tandem repeats, are related to each other, and PIR1 and PIR2 are required for tolerance to heat shock. Yeast 9: 481-494.
2. Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. Biochim. Biophys. Acta 1265: 152-160.
3. Sun, H. 1998. Functional studies of dual-specificity phosphatases. Methods Mol. Biol. 84: 307-318.
4. Yuan, Y., Li, D.M. and Sun, H. 1998. PIR1, a novel phosphatase that exhibits hig complexes. J. Biol. Chem. 273: 20347-20353.
5. Deshpande, T., Takagi, T., Hao, L., Buratowski, S. and Charbonneau, H. 1999. Human PIR1 of the protein-tyrosine phosphatase superfamily has RNA 5'-triphosphatase and diphosphatase activities. J. Biol. Chem. 274: 16590-16594.
6. Camps, M., Nichols, A. and Arkinstall, S. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. FASEB J. 14: 6-16.
7. Martínez, A.I., Castillo, L., Garcera, A., Elorza, M.V., Valentin, E. and Sentandreu, R. 2004. Role of PIR1 in the construction of the Candida albicans cell wall. Microbiology 150: 3151-3161.

CHROMOSOMAL LOCATION

Genetic locus: DUSP11 (human) mapping to 2p13.1.

SOURCE

PIR1 (S-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PIR1 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-47922 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIR1 (S-18) is recommended for detection of PIR1 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 PIR1 siRNA (h): sc-61357, PIR1 shRNA Plasmid (h): sc-61357-SH and PIR1 shRNA (h) Lentiviral Particles: sc-61357-V.

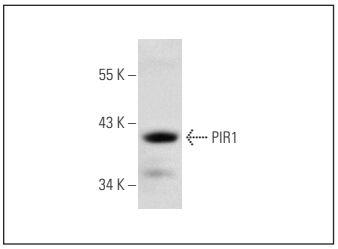
Molecular Weight of PIR1: 39 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

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



PIR1 (S-18): sc-47922. Western blot analysis of PIR1 expression in 293T 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.