

PIR1 (B-6): sc-393220

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

- Toh-e, A., et al. 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.
- Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. *Biochim. Biophys. Acta* 1265: 152-160.
- Sun, H. 1998. Functional studies of dual-specificity phosphatases. *Methods Mol. Biol.* 84: 307-318.
- Yuan, Y., et al. 1998. PIR1, a novel phosphatase that exhibits high affinity to RNA ribonucleoprotein complexes. *J. Biol. Chem.* 273: 20347-20353.
- Deshpande, T., et al. 1999. Human PIR1 of the protein-tyrosine phosphatase superfamily has RNA 5'-triphosphatase and diphosphatase activities. *J. Biol. Chem.* 274: 16590-16594.
- Camps, M., et al. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. *FASEB J.* 14: 6-16.

CHROMOSOMAL LOCATION

Genetic locus: DUSP11 (human) mapping to 2p13.1; Dusp11 (mouse) mapping to 6 C3.

SOURCE

PIR1 (B-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 39-58 near the N-terminus of PIR1 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393220 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

PIR1 (B-6) is recommended for detection of PIR1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

PIR1 (B-6) is also recommended for detection of PIR1 in additional species, including porcine.

Suitable for use as control antibody for PIR1 siRNA (h): sc-61357, PIR1 siRNA (m): sc-61358, PIR1 shRNA Plasmid (h): sc-61357-SH, PIR1 shRNA Plasmid (m): sc-61358-SH, PIR1 shRNA (h) Lentiviral Particles: sc-61357-V and PIR1 shRNA (m) Lentiviral Particles: sc-61358-V.

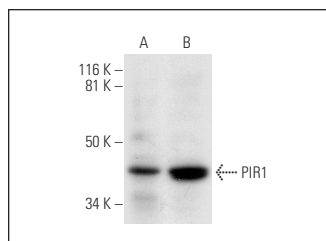
Molecular Weight of PIR1: 39 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, U-2 OS cell lysate: sc-2295 or HeLa whole cell lysate: sc-2200.

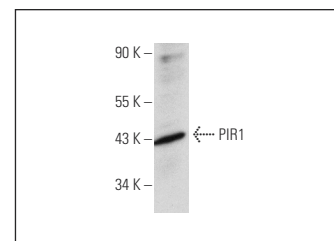
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



PIR1 (B-6): sc-393220. Western blot analysis of PIR1 expression in A-431 (A) and HeLa (B) whole cell lysates.



PIR1 (B-6): sc-393220. Western blot analysis of PIR1 expression in U-2 OS whole cell lysate.

SELECT PRODUCT CITATIONS

- Xu, L., et al. 2021. Dual-specificity phosphatase 11 is a prognostic biomarker of intrahepatic cholangiocarcinoma. *Front. Oncol.* 11: 757498.

STORAGE

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