SANTA CRUZ BIOTECHNOLOGY, INC.

PIS1 (D-1): sc-514565

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PIS1, also known as CDIPT (CDP-diacylglycerol—inositol 3-phosphatidyltransferase) or PIS (phosphatidylinositol synthase), is a 213 amino acid multi-pass membrane protein that belongs to the CDP-alcohol phosphatidyltransferase class-I family and exists as 2 alternatively spliced isoforms. Localizing to Golgi apparatus and the cytoplasmic side of endoplasmic reticulum, PIS1 is widely expressed, with highest expression in adult liver and skeletal muscle. PIS1 catalyzes the biosynthesis of phosphatidylinositol (PtdIns), as well as the PtdIns-inositol exchange reaction, which is due to the reverse reaction of PtdIns synthase and is CMP-dependent. PIS1 may also reduce excessive cellular PtdIns. Highly conserved in yeast and mammals, PIS1 is encoded by a gene that maps to human chromosome 16p11.2.

REFERENCES

1. Takenawa, T. and Nagai, Y. 1982. Effect of unsaturated fatty acids and Ca^{2+} on phosphatidylinositol synthesis and breakdown. J. Biochem. 91: 793-799.
2. Anderson, M.S. and Lopes, J.M. 1996. Carbon source regulation of PIS1 gene expression in *Saccharomyces cerevisiae* involves the MCM1 gene and the two-component regulatory gene, SLN1. J. Biol. Chem. 271: 26596-26601.
3. Fujita, H. and Syono, K. 1997. PIS1, a negative regulator of the action of auxin transport inhibitors in *Arabidopsis thaliana*. Plant J. 12: 583-595.
4. Gardocki, M.E. and Lopes, J.M. 2003. Expression of the yeast PIS1 gene requires multiple regulatory elements including a Rox1p binding site. J. Biol. Chem. 278: 38646-38652.
5. Gardocki, M.E., et al. 2005. Genomic analysis of PIS1 gene expression. Eukaryot. Cell 4: 604-614.
6. Han, S.H., et al. 2005. Regulation of the PIS1-encoded phosphatidylinositol synthase in *Saccharomyces cerevisiae* by zinc. J. Biol. Chem. 280: 29017-29024.
7. Rohatgi, N., et al. 2006. Novel molecular targets of smokeless tobacco (khaini) in cell culture from oral hyperplasia. Toxicology 224: 1-13.

CHROMOSOMAL LOCATION

Genetic locus: CDIPT (human) mapping to 16p11.2; Cdipt (mouse) mapping to 7 F3.

SOURCE

PIS1 (D-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 57-79 within an internal region of PIS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-514565 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PIS1 (D-1) is recommended for detection of PIS1 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).

Suitable for use as control antibody for PIS1 siRNA (h): sc-93119, PIS1 siRNA (m): sc-152276, PIS1 siRNA (r): sc-270262, PIS1 shRNA Plasmid (h): sc-93119-SH, PIS1 shRNA Plasmid (m): sc-152276-SH, PIS1 shRNA Plasmid (r): sc-270262-SH, PIS1 shRNA (h) Lentiviral Particles: sc-93119-V, PIS1 shRNA (m) Lentiviral Particles: sc-152276-V and PIS1 shRNA (r) Lentiviral Particles: sc-270262-V.

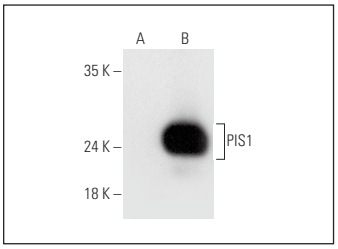
Molecular Weight of PIS1 isoforms: 24/19 kDa.

Positive Controls: PIS1 (m): 293T Lysate: sc-127338, human stomach extract: sc-363780 or human adrenal gland extract: sc-363761.

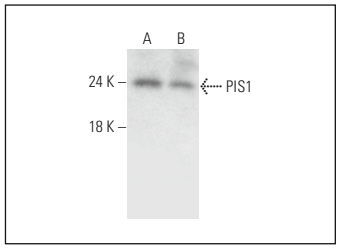
RECOMMENDED SUPPORT REAGENTS

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



PIS1 (D-1): sc-514565. Western blot analysis of PIS1 expression in non-transfected: sc-117752 (**A**) and mouse PIS1 transfected: sc-127338 (**B**) 293T whole cell lysates.



PIS1 (D-1): sc-514565. Western blot analysis of PIS1 expression in human adrenal gland (**A**) and human stomach (**B**) tissue extracts.

STORAGE

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

RESEARCH USE

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