

PIS1 (C-2): sc-514255

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 two 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.

CHROMOSOMAL LOCATION

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

SOURCE

PIS1 (C-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 55-78 within an internal region of PIS1 of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PIS1 (C-2) is available conjugated to agarose (sc-514255 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-514255 HRP), 200 μg /ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514255 PE), fluorescein (sc-514255 FITC), Alexa Fluor® 488 (sc-514255 AF488), Alexa Fluor® 546 (sc-514255 AF546), Alexa Fluor® 594 (sc-514255 AF594) or Alexa Fluor® 647 (sc-514255 AF647), 200 μg /ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514255 AF680) or Alexa Fluor® 790 (sc-514255 AF790), 200 μg /ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514255 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

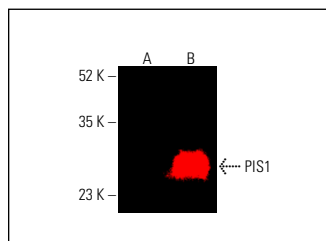
PIS1 (C-2) is recommended for detection of PIS1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

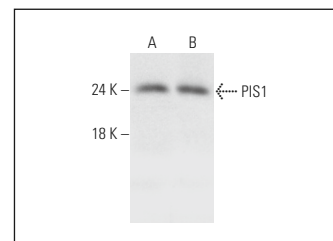
Molecular Weight of PIS1 isoforms: 24/19 kDa.

Positive Controls: PIS1 (m): 293T Lysate: sc-127338, HeLa whole cell lysate: sc-2200 or human stomach extract: sc-363780.

DATA



PIS1 (C-2): sc-514255. Near-Infrared western blot analysis of PIS1 expression in non-transfected: sc-117752 (A) and mouse PIS1 transfected: sc-127338 (B) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 790: sc-542740.



PIS1 (C-2): sc-514255. Western blot analysis of PIS1 expression in HeLa whole cell lysate (A) and human stomach tissue extract (B).

SELECT PRODUCT CITATIONS

1. Tábara, L.C., et al. 2018. Vacuole membrane protein 1 marks endoplasmic reticulum subdomains enriched in phospholipid synthesizing enzymes and is required for phosphoinositide distribution. *Traffic* 19: 624-638.
2. Hsu, C.C., et al. 2021. Inositol serves as a natural inhibitor of mitochondrial fission by directly targeting AMPK. *Mol. Cell* 81: 3803-3819.e7.

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.

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