

PISD (B-3): sc-515176

BACKGROUND

Enzymes known as phosphatidylserine decarboxylases (PSDs) catalyze the formation of phosphatidylethanolamine from phosphatidylserine via phosphatidylserine decarboxylation. Type I PSDs contain LGST motifs and are found in bacteria and eukaryotic mitochondria, whereas type II PSDs contain GGST motifs and are found in eukaryotic endomembrane systems. PISD (phosphatidylserine decarboxylase), also known as phosphatidylserine decarboxylase proenzyme, PSDC, PSD, PSSC, DJ858B16, dJ858B16.2 or DKFZp566G2246, is a 408 amino acid type I phosphatidylserine decarboxylase that localizes to the inner mitochondrial membrane. PISD contains a conserved LGST motif which is cleaved to produce two isoforms known as PISD α and PISD β . PISD is capable of forming a heterodimer and is highly expressed in liver and testis. The gene encoding PISD maps to human chromosome 22q12.2.

REFERENCES

1. Kuge, O., Nishijima, M. and Akamatsu, Y. 1991. A cloned gene encoding phosphatidylserine decarboxylase complements the phosphatidylserine biosynthetic defect of a Chinese hamster ovary cell mutant. *J. Biol. Chem.* 266: 6370-6376.
2. Kuge, O., Saito, K., Kojima, M., Akamatsu, Y. and Nishijima, M. 1996. Post-translational processing of the phosphatidylserine decarboxylase gene product in Chinese hamster ovary cells. *Biochem. J.* 319: 33-38.
3. Steenbergen, R., Nanowski, T.S., Beigneux, A., Kulinski, A., Young, S.G. and Vance, J.E. 2005. Disruption of the phosphatidylserine decarboxylase gene in mice causes embryonic lethality and mitochondrial defects. *J. Biol. Chem.* 280: 40032-40040.
4. Forbes, C.D., Toth, J.G., Ozbal, C.C., Lamarr, W.A., Pendleton, J.A., Rocks, S., Gedrich, R.W., Osterman, D.G., Landro, J.A. and Lumb, K.J. 2007. High-throughput mass spectrometry screening for inhibitors of phosphatidylserine decarboxylase. *J. Biomol. Screen.* 12: 628-634.
5. Schuiki, I. and Daum, G. 2009. Phosphatidylserine decarboxylases, key enzymes of lipid metabolism. *IUBMB Life* 61: 151-162.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612770. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: PISD (human) mapping to 22q12.2; Pisd (mouse) mapping to 5 B1.

SOURCE

PISD (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 292-311 within an internal region of PISD 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 μ g IgG_{2a} 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-515176 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PISD (B-3) is recommended for detection of PISD of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 PISD siRNA (h): sc-76147, PISD siRNA (m): sc-152277, PISD shRNA Plasmid (h): sc-76147-SH, PISD shRNA Plasmid (m): sc-152277-SH, PISD shRNA (h) Lentiviral Particles: sc-76147-V and PISD shRNA (m) Lentiviral Particles: sc-152277-V.

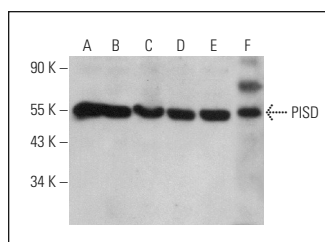
Molecular Weight of PISD isoform 1/2: 47/43 kDa.

Positive Controls: JAR cell lysate: sc-2276, HEK293T whole cell lysate: sc-45137 or K-562 whole cell lysate: sc-2203.

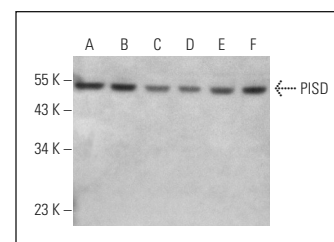
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



PISD (B-3): sc-515176. Western blot analysis of PISD expression in JAR (A), K-562 (B), PC-3 (C), A549 (D) and RAW 264.7 (E) whole cell lysates and rat eye tissue extract (F).



PISD (B-3): sc-515176. Western blot analysis of PISD expression in JAR (A), K-562 (B), Hep G2 (C), HeLa (D), COLO 320DM (E) and HEK293T (F) whole cell lysates.

RESEARCH USE

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