SANTA CRUZ BIOTECHNOLOGY, INC.

PSS1 (B-5): sc-515376

BACKGROUND

Phosphatidylserine synthases (PSS) are widespread, ancestral enzymes with a highly conserved function. PSS is a membrane protein responsible for catalyzing the calcium-dependent base exchange of serine with existing phospholipid head groups in the biosynthesis of phosphatidylserine (PtdSer), a major anionic phospholipid expressed on the inner layer of the plasma membrane. Two forms of PSS exist, PSS1 and PSS2, both localizing to the mitochondria-associated membrane. These two forms are encoded by different genes but share very similar characteristics, differing only in their substrate specificity. The primary substrate for PSS1 is phosphatidylcholine and the substrate for PSS2 is phosphatidylethanolamine. PSS1 and PSS2 are directly inhibited by PtdSer and this inhibition is important for feedback control of PtdSer synthesis. Cells overexpressing PSS1 and PSS2 are significantly resistant to UV-induced apoptosis.

REFERENCES

1. Stone, S.J., et al. 1999. Cloning and expression of murine liver phospha-tidylserine synthase (PSS)2: differential regulation of phospholipid metabolism by PSS1 and PSS2. Biochem. J. 342: 57-64.
2. Stone, S.J., et al. 2000. Phosphatidylserine synthase-1 and -2 are localized to mitochondria-associated membranes. J. Biol. Chem. 275: 34534-34540.
3. Kuge, O., et al. 2003. Purification and characterization of Chinese hamster phosphatidylserine synthase 2. J. Biol. Chem. 278: 42692-42698.
4. Kuge, O., et al. 2003. Biosynthetic regulation and intracellular transport of phosphatidylserine in mammalian cells. J. Biochem. 133: 397-403.

CHROMOSOMAL LOCATION

Genetic locus: PTDSS1 (human) mapping to 8q22.1; Ptdss1 (mouse) mapping to 13 B3.

SOURCE

PSS1 (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 409-435 near the C-terminus of PSS1 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.

PSS1 (B-5) is available conjugated to agarose (sc-515376 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515376 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515376 PE), fluorescein (sc-515376 FITC), Alexa Fluor® 488 (sc-515376 AF488), Alexa Fluor® 546 (sc-515376 AF546), Alexa Fluor® 594 (sc-515376 AF594) or Alexa Fluor® 647 (sc-515376 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515376 AF680) or Alexa Fluor® 790 (sc-515376 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515376 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PSS1 (B-5) is recommended for detection of PSS1 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 PSS1 siRNA (h): sc-72365, PSS1 siRNA (m): sc-72366, PSS1 shRNA Plasmid (h): sc-72365-SH, PSS1 shRNA Plasmid (m): sc-72366-SH, PSS1 shRNA (h) Lentiviral Particles: sc-72365-V and PSS1 shRNA (m) Lentiviral Particles: sc-72366-V.

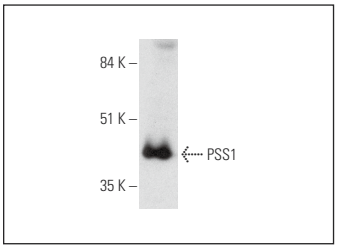
Molecular Weight of PSS1: 42 kDa.

Positive Controls: mouse brain extract: sc-2253.

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



PSS1 (B-5): sc-515376. Western blot analysis of PSS1 expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Sassano, M.L., et al. 2023. PERK recruits E-Syt1 at ER-mitochondria contacts for mitochondrial lipid transport and respiration. J. Cell Biol. 222: e202206008.

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.