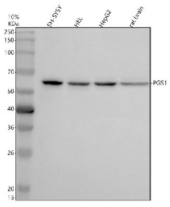
PGS1 Antibody / Phosphatidylglycerophosphate synthase 1 (FY12270)

Catalog No.	Formulation	Size
FY12270	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q32NB8
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This PGS1 antibody is available for research use only.



Western blot analysis of PGS1 using anti-PGS1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human SH-SY5Y whole cell lysates, Lane 2: human HEL whole cell lysates, Lane 3: human HepG2 whole cell lysates, Lane 4: rat brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PGS1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A specific band was detected for PGS1 at approximately 63 kDa. The expected band size for PGS1 is at 63 kDa.

Description

PGS1 antibody detects Phosphatidylglycerophosphate synthase 1, encoded by the PGS1 gene on chromosome 17q21.33. PGS1 antibody is widely used in studies of mitochondrial lipid metabolism, cardiolipin biosynthesis, and cellular

energy homeostasis. PGS1 encodes a key enzyme in the biosynthetic pathway for phosphatidylglycerophosphate, which is a precursor of phosphatidylglycerol and cardiolipin. These mitochondrial phospholipids are essential for respiratory chain function, mitochondrial morphology, and apoptosis regulation.

Structurally, PGS1 is a ~56 kDa protein localized to the inner mitochondrial membrane. It contains transmembrane domains that anchor it within the lipid bilayer and a catalytic region that mediates condensation of CDP-diacylglycerol with glycerol-3-phosphate. The enzyme operates as part of the mitochondrial lipid biosynthesis machinery, which coordinates the synthesis of cardiolipin required for respiratory chain supercomplex stability.

Functionally, PGS1 generates phosphatidylglycerophosphate, which is dephosphorylated to phosphatidylglycerol and further converted to cardiolipin. Cardiolipin is critical for optimal activity of electron transport chain complexes and mitochondrial dynamics. Disruption of PGS1 function impairs cardiolipin synthesis, leading to defective oxidative phosphorylation, altered mitochondrial morphology, and increased susceptibility to apoptosis. Researchers use PGS1 antibody to study lipid metabolism, mitochondrial function, and cell death pathways.

Clinically, mutations in PGS1 cause mitochondrial disorders characterized by lactic acidosis, developmental delay, and cardiomyopathy. PGS1 deficiency resembles Barth syndrome due to cardiolipin deficiency. Dysregulation of cardiolipin metabolism has been linked to neurodegeneration, cancer, and metabolic diseases. Because cardiolipin plays a role in apoptosis signaling, PGS1 has also been investigated in cancer biology. NSJ Bioreagents supplies PGS1 antibody to support studies of mitochondrial disease, lipid biology, and energy metabolism.

Experimentally, PGS1 antibody is used in western blotting to detect the ~56 kDa protein, in immunohistochemistry to examine mitochondrial distribution in tissues, and in immunofluorescence microscopy to assess subcellular localization. Co-immunoprecipitation with PGS1 antibody identifies interactions with cardiolipin synthase and other lipid biosynthetic enzymes.

Application Notes

Optimal dilution of the PGS1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PGS1 recombinant protein (Position: R33-R525) was used as the immunogen for the PGS1 antibody.

Storage

After reconstitution, the PGS1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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