

GPAT1 Antibody

Catalog # ASC10696

Specification

GPAT1 Antibody - Product Information

Application Primary Accession Other Accession Reactivity Host Clonality Isotype Calculated MW

Application Notes

WB, IHC-P, IF, E <u>O9HCL2</u> <u>NP_065969</u>, <u>57678</u> Human, Mouse, Rat Rabbit Polyclonal IgG Predicted: 87, 91 kDa

Observed: 92 kDa KDa GPAT1 antibody can be used for detection of GPAT1 by Western blot at 1 - 2 μ g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 μ g/mL. For immunofluorescence start at 20 μ g/mL.

GPAT1 Antibody - Additional Information

Gene ID Target/Specificity 57678

Reconstitution & Storage

GPAT1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions

GPAT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

GPAT1 Antibody - Protein Information

Name GPAM (HGNC:24865)

Function

Mitochondrial membrane protein that catalyzes the essential first step of biosynthesis of glycerolipids such as triglycerides, phosphatidic acids and lysophosphatidic acids (PubMed:18238778, PubMed:19075029, PubMed:19075029, PubMed:36522428). Esterifies acyl-group from acyl- coenzyme A (acyl-CoA) to the sn-1 position of glycerol-3-phosphate, to



produce lysophosphatidic acid (PubMed:18238778). Has a narrow hydrophobic binding cleft that selects for a linear acyl chain (PubMed:36522428). Catalytic activity is higher for substrates with a 16-carbon acyl chain (PubMed:36522428). Catalytic activity is higher for substrates with a 16-carbon acyl chain (PubMed:36522428).

Cellular Location

Mitochondrion outer membrane; Peripheral membrane protein. Note=Associated with the mitochondrion outer membrane of hepatic cells via a patch of basic residues

GPAT1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>
- **GPAT1 Antibody Images**



Western blot analysis of FAF1 in THP-1 cell lysate with FAF1 antibody at (A) 1 and (B) 2 µg/mL. GPAT1 Antibody - Background

GPAT1 Antibody: Glycerol-3-phosphate acyltransferase 1 (GPAT1), one of four known GPAT isoforms, is located on the mitochondrial outer membrane, allowing reciprocal regulation with carnitine palmitoyltransferase-1. It is thought to be critical for the development of hepatic steatosis; steatosis triggered by GPAT1 overexpression leads to hepatic and possibly peripheral insulin resistance. GPAT1 is transcriptionally upregulated by insulin and sterol regulatory element binding protein (SREBP-1) and downregulated by AMP-activated protein kinase. Mice deficient in GPAT1 exhibit decreased triacylglycerol (TAG) in cardiomyocytes even in high-fat diets, suggesting that



GPAT1 contributes significantly to TAG accumulation in heart tissue during lipogenic or high fat diets.

GPAT1 Antibody - References

Coleman RA and Lee DP. Enzymes of triacylglycerol synthesis and their regulation. Prog. Lipid Res. 2004; 43:134-76.

Linden D, William-Olsson L, Ahnmark A, et al. Liver-directed overexpression of mitochondrial glycerol-3-phosphate acyltransferase results in hepatic steatosis, increased triacylglycerol secretion and reduced fatty acid oxidation. FASEB J. 2006; 20:434-43.

Eberle D, Hegarty B, Bossard P, et al. SREBP transcription factors: master regulators of lipid homeostasis. Biochimie 2004; 86:839-48.

Lewin TM, de Jong H, Schwerbrock NJ, et al. Mice deficient in glycerol-3-phosphate acyltransferase-1 have diminished myocardial triacylglycerol accumulation during lipogenic diet and altered phospholipid fatty acid composition. Biochim. Biophys. Acta 2008; 1781:352-8.