

GPAT1 Antibody
Catalog # ASC10696**Specification****GPAT1 Antibody - Product Information**

Application	WB
Primary Accession	O9HCL2
Other Accession	NP_065969 , 57678
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	Predicted: 87, 91 kDa

Application Notes	Observed: 92 kDa KDa GPAT1 antibody can be used for detection of GPAT1 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.
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GPAT1 Antibody - Additional InformationGene ID **57678****Target/Specificity**

GPAT1 antibody was raised against a 15 amino acid synthetic peptide near the carboxy terminus of the human GPAT1.

The immunogen is located within amino acids 730 - 780 of GPAT1.

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 InformationName 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: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).

Cellular Location

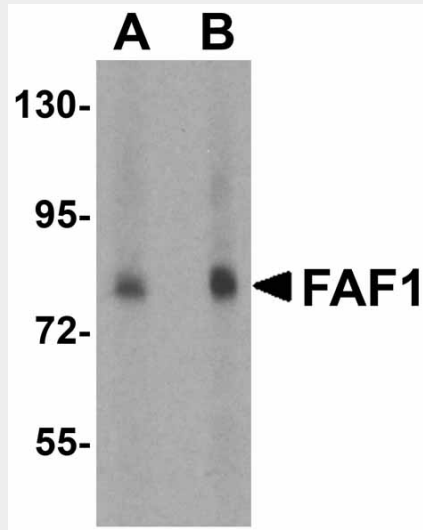
Mitochondrion outer membrane; Peripheral membrane protein. Note=Associated with the mitochondrion outer membrane of hepatic cells via a patch of basic residues

GPAT1 Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

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.