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LPIN1 Antibody
Catalog # ASC11671

Specification

LPIN1 Antibody - Product Information

Application	**WB, IHC, IF**
Primary Accession	Q14693
Other Accession	NP_001248357, 387528013
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 107 kDa** **Observed: 125 kDa KDa**
Application Notes	**LPIN1 antibody can be used for detection of LPIN1 by Western blot at 1 - 2 µg/mL.**

LPIN1 Antibody - Additional Information

Gene ID **23175**

Target/Specificity
LPIN1; LPIN1 antibody is human and mouse reactive. At least four isoforms of LPIN1 are known to exist.

Reconstitution & Storage
LPIN antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.

Precautions
LPIN1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

LPIN1 Antibody - Protein Information

Name LPIN1 (HGNC:13345)

Synonyms KIAA0188

Function
Acts as a magnesium-dependent phosphatidate phosphatase enzyme which catalyzes the conversion of phosphatidic acid to diacylglycerol during triglyceride, phosphatidylcholine and phosphatidylethanolamine biosynthesis and therefore controls the metabolism of fatty acids at different levels (PubMed:20231281, PubMed:29765047). Is involved in adipocyte differentiation (By similarity). Acts also as nuclear transcriptional coactivator for PPARGC1A/PPARA regulatory pathway to modulate lipid metabolism gene expression (By similarity). Recruited at the mitochondrion outer membrane and is involved in mitochondrial fission by converting phosphatidic acid to diacylglycerol (By similarity).

Cellular Location
Cytoplasm, cytosol. Endoplasmic reticulum membrane. Nucleus membrane {ECO:0000250|UniProtKB:Q91ZP3}. Note=Translocates from the cytosol to the endoplasmic reticulum following acetylation by KAT5

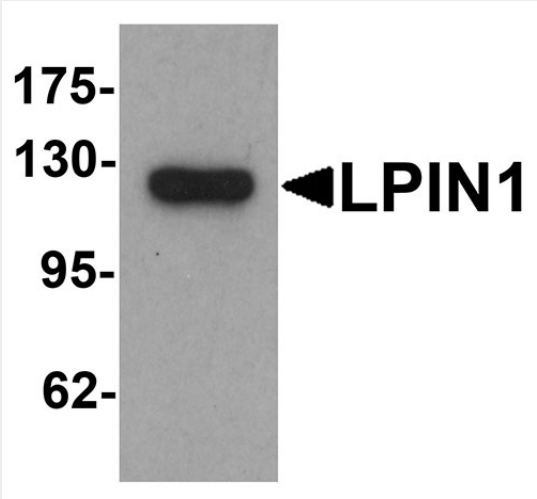
Tissue Location
Specifically expressed in skeletal muscle. Also abundant in adipose tissue. Lower levels in some portions of the digestive tract.

LPIN1 Antibody - Protocols

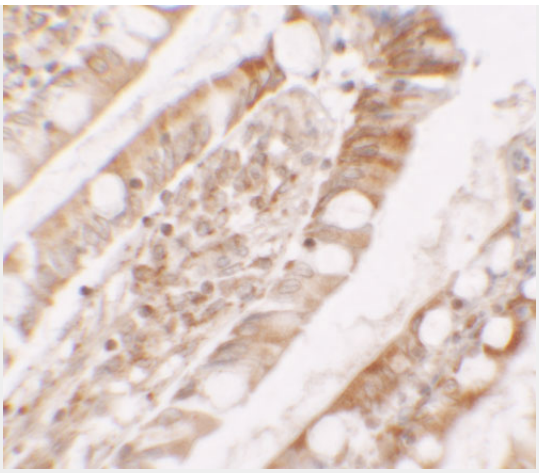
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

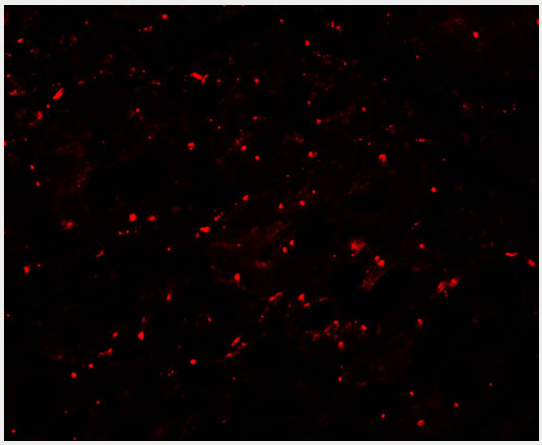
LPIN1 Antibody - Images



Western blot analysis of LPIN1 in K562 cell lysate with LPIN1 antibody at 1 µg/mL.



Immunohistochemistry of LPIN1 in human small intestine tissue with LPIN1 antibody at 5 µg/ml.



Immunofluorescence of LPIN1 in human small intestine tissue with LPIN1 antibody at 20 µg/ml.

LPIN1 Antibody - Background

LPIN1 Antibody: LPIN1, also known as PAP1, is a magnesium-ion-dependent phosphatidic acid phosphohydrolase enzyme that catalyzes the penultimate step in triglyceride synthesis including the dephosphorylation of phosphatidic acid to yield diacylglycerol (reviewed in 1). LPIN1 is required for adipocyte differentiation and it also functions as a nuclear transcriptional coactivator with some peroxisome proliferator-activated receptors to modulate expression of other genes involved in lipid metabolism (1,2). Mutations in LPIN1 are associated with metabolic diseases such as type 2 diabetes and recurrent acute myoglobinuria (3,4) and it is also a candidate for several human lipodystrophy syndromes (5).

LPIN1 Antibody - References

Reue K and Zhang P. The lipin protein family: dual roles in lipid biosynthesis and gene expression. FEBS Lett. 2008; 582:90-6.
Peterfy M, Phan J, Xu P, et al. Lipodystrophy in the fld mouse results from mutation of a new gene encoding a nuclear protein, lipin. Nat. Genet. 2001; 27:121-4.
Zhang R, Jiang F, Hu C, et al. Genetic variants of LPIN1 indicate an association with Type 2 diabetes mellitus in a Chinese population. Diabet. Med. 2013; 30:118-22.
Zeharia A, Shaag A, Houtkooper RH, et al. Mutations in LPIN1 cause recurrent acute myoglobinuria in childhood. Am. J. Hum. Genet. 2008; 83:489-94.