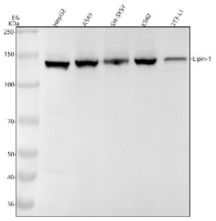
LPIN1 Antibody / Lipin 1 [clone 19L53] (FY13423)

Catalog No.	Formulation	Size
FY13423	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	19L53
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	Q14693
Applications	Western Blot : 1:500-1:2000
Limitations	This LPIN1 antibody is available for research use only.



Western blot analysis of LPIN1 expression using anti-LPIN1 antibody. Cell lysates include human HepG2, A549, SH-SY5Y, K562, and mouse 3T3-L1 cells. A major band is detected at approximately 130-140 kDa, consistent with heavily phosphorylated Lipin 1, which is known to migrate above its predicted molecular weight on SDS-PAGE.

Description

LPIN1 antibody targets Lipin 1 (LPIN1), a multifunctional protein that plays a central role in lipid metabolism and transcriptional regulation. Lipin 1 functions both as a phosphatidate phosphatase enzyme and as a transcriptional co-regulator, allowing it to integrate metabolic signals with gene expression programs. LPIN1 is predominantly localized in

the cytoplasm, where it participates in lipid biosynthesis, but it can also translocate to the nucleus under specific metabolic conditions. This dual localization underlies its ability to coordinate lipid metabolism with broader cellular responses to nutrient availability.

Lipin 1 is best characterized for its role in glycerolipid synthesis. As a phosphatidate phosphatase, LPIN1 catalyzes the conversion of phosphatidic acid to diacylglycerol, a key step in the biosynthesis of triglycerides and phospholipids. Through this activity, LPIN1 influences lipid storage, membrane composition, and signaling lipid availability. In parallel, LPIN1 can act in the nucleus as a co-regulator of transcription factors involved in fatty acid oxidation and energy metabolism, linking enzymatic lipid processing to transcriptional control. An LPIN1 antibody supports research into how lipid metabolic pathways are coordinated at both enzymatic and transcriptional levels.

LPIN1 expression is particularly prominent in metabolically active tissues such as skeletal muscle, adipose tissue, and liver. Its expression and activity are dynamically regulated by hormonal signals, nutrient status, and cellular energy balance. During metabolic stress or changes in energy demand, LPIN1 localization and function can shift, reflecting its role as a metabolic sensor. Studying LPIN1 expression patterns provides insight into tissue-specific lipid handling and adaptive metabolic responses under physiological and pathological conditions.

From a disease-relevant perspective, LPIN1 has been extensively studied in the context of metabolic disorders. Altered LPIN1 function has been associated with dysregulated lipid storage, insulin sensitivity, and muscle metabolism. Inherited defects in LPIN1 activity are linked to severe metabolic phenotypes, underscoring its importance in maintaining lipid homeostasis. LPIN1 has also been examined in cancer and inflammatory research, where changes in lipid metabolism can influence cell proliferation, survival, and signaling. Investigating LPIN1 expression with an LPIN1 antibody is therefore relevant to studies spanning metabolism, muscle biology, and disease-associated lipid dysregulation.

At the molecular level, the LPIN1 gene encodes a protein of approximately 100 kDa that contains conserved domains required for phosphatidate phosphatase activity and protein-protein interactions. Proper LPIN1 function depends on its regulated phosphorylation state and subcellular localization, which determine whether it acts primarily in lipid synthesis or transcriptional regulation. Disruption of these regulatory mechanisms can lead to significant alterations in cellular lipid balance. An LPIN1 antibody enables detection and analysis of LPIN1 expression in research applications focused on lipid metabolism and metabolic signaling, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the LPIN1 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Lipin 1 protein was used as the immunogen for the LPIN1 antibody.

Storage

Store the LPIN1 antibody at -20oC.