

# LPCAT1 (F-9): sc-518182

## BACKGROUND

LPCAT1 (lysophosphatidylcholine acyltransferase 1), also known as AYT12 (acyltransferase-like 2) or PFAAP3 (phosphonoformate immuno-associated protein 3), is a 534 amino acid single-pass type II membrane protein that contains two EF-hand domains and belongs to the 1-acyl-sn-glycerol-3-phosphate acyltransferase family. While its activity is calcium-independent, LPCAT1 possesses both acyltransferase and acetyltransferase activities, and mediates the conversion of 1-acyl-sn-glycerol-3-phosphocholine (LPC) into phosphatidylcholine (PC). LPCAT1 displays a clear preference for saturated fatty acyl-CoAs, and 1-myristoyl or 1-palmitoyl LPC as acyl donors and acceptors, respectively. Playing a pivotal role in respiratory physiology, LPCAT1 may synthesize phosphatidylcholine in pulmonary surfactant. LPCAT1 contains an HXXXX motif, which is essential for acyltransferase activity and may constitute the binding site for the phosphate moiety of the glycerol-3-phosphate.

## REFERENCES

1. Nakanishi, H., et al. 2006. Cloning and characterization of mouse lung-type acyl-CoA:lysophosphatidylcholine acyltransferase 1 (LPCAT1). Expression in alveolar type II cells and possible involvement in surfactant production. *J. Biol. Chem.* 281: 20140-20147.
2. Chen, X., et al. 2006. Identification and characterization of a lysophosphatidylcholine acyltransferase in alveolar type II cells. *Proc. Natl. Acad. Sci. USA* 103: 11724-11729.
3. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610472. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Soupene, E., et al. 2008. Mammalian acyl-CoA:lysophosphatidylcholine acyltransferase enzymes. *Proc. Natl. Acad. Sci. USA* 105: 88-93.
5. Harayama, T., et al. 2009. Biosynthesis of phosphatidylcholine by human lysophosphatidylcholine acyltransferase 1. *J. Lipid Res.* 50: 1824-1831.

## CHROMOSOMAL LOCATION

Genetic locus: LPCAT1 (human) mapping to 5p15.33.

## SOURCE

LPCAT1 (F-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 174-196 of LPCAT1 of human origin.

## PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LPCAT1 (F-9) is available conjugated to agarose (sc-518182 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518182 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518182 PE), fluorescein (sc-518182 FITC), Alexa Fluor® 488 (sc-518182 AF488), Alexa Fluor® 546 (sc-518182 AF546), Alexa Fluor® 594 (sc-518182 AF594) or Alexa Fluor® 647 (sc-518182 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518182 AF680) or Alexa Fluor® 790 (sc-518182 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

LPCAT1 (F-9) is recommended for detection of LPCAT1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LPCAT1 siRNA (h): sc-91777, LPCAT1 shRNA Plasmid (h): sc-91777-SH and LPCAT1 shRNA (h) Lentiviral Particles: sc-91777-V.

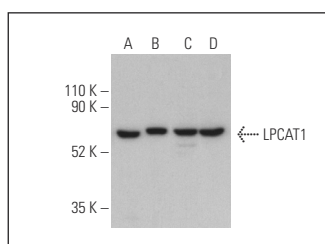
Molecular Weight of LPCAT1: 59 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, PC-3 cell lysate: sc-2220 or RT-4 whole cell lysate: sc-364257.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



LPCAT1 (F-9): sc-518182. Western blot analysis of LPCAT1 expression in A-431 (A), PC-3 (B), RT-4 (C) and LNCaP (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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