

LPAAT- θ (T-17): sc-66789

BACKGROUND

Phosphatidic acid and lysophosphatidic acid are phospholipids involved in lipid biosynthesis and signal transduction. LPAAT- θ (lysophosphatidic acid acyltransferase θ) catalyzes the synthesis of phosphatidic acid from lysophosphatidic acid. LPAAT- θ is a membrane-bound protein belonging to the LPAAT family. Members of the LPAAT family have a well-known role in lipid biosynthesis, and they may also play a role in tumor progression. LPAAT- θ localizes to the endoplasmic reticulum and is expressed in numerous tissue types. Low expression levels are detected in brain, kidney, liver, pancreas, placenta, prostate and thymus. The overexpression of LPAAT- θ can induce FRAP-dependent p70 S6 kinase phosphorylation on Thr389 and 4E-BP1 phosphorylation on Ser65.

REFERENCES

- West, J., Tompkins, C.K., Balantac, N., Nudelman, E., Meengs, B., White, T., Bursten, S., Coleman, J., Kumar, A., Singer, J.W. and Leung, D.W. 1997. Cloning and expression of two human lysophosphatidic acid acyltransferase cDNAs that enhance cytokine-induced signaling responses in cells. *DNA Cell Biol.* 16: 691-701.
- Eberhardt, C., Gray, P.W., Tjoelker and L.W. 1997. Human lysophosphatidic acid acyltransferase. cDNA cloning, expression, and localization to chromosome 9q34.3. *J. Biol. Chem.* 272: 20299-20305.
- Eberhardt, C., Gray, P.W. and Tjoelker, L.W. 1999. cDNA cloning, expression and chromosomal localization of two human lysophosphatidic acid acyltransferases. *Adv. Exp. Med. Biol.* 469: 351-356.
- Bursten, S.L. 1998. Interaction of lipopolysaccharide with a mammalian lysophosphatidate acyltransferase (LPAAT) transfected into *E. coli*, and effect of lisofylline on LPAAT transfected into mammalian cells. *Prog. Clin. Biol. Res.* 397: 345-356.
- Aguado, B. and Campbell, R.D. 1998. Characterization of a human lysophosphatidic acid acyltransferase that is encoded by a gene located in the class III region of the human major histocompatibility complex. *J. Biol. Chem.* 273: 4096-4105.
- Yamashita, A., Kawagishi, N., Miyashita, T., Nagatsuka, T., Sugiura, T., Kume, K., Shimizu, T. and Waku, K. 2001. ATP-independent fatty acyl-coenzyme A synthesis from phospholipid:coenzyme A-dependent transacylation activity toward lysophosphatidic acid catalyzed by acyl-coenzyme A:lysophosphatidic acid acyltransferase. *J. Biol. Chem.* 276: 26745-26752.
- Tang, W., Yuan, J., Chen, X., Gu, X., Luo, K., Li, J., Wan, B., Wang, Y. and Yu, L. 2006. Identification of a novel human lysophosphatidic acid acyltransferase, LPAAT- θ , which activates mTOR pathway. *J. Biochem. Mol. Biol.* 39: 626-635.

CHROMOSOMAL LOCATION

Genetic locus: Agpat9 (mouse) mapping to 5 E4.

SOURCE

LPAAT- θ (T-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of LPAAT- θ of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-66789 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

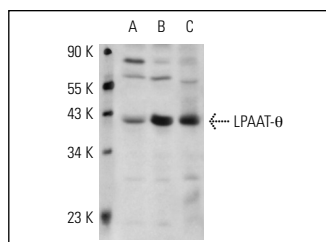
LPAAT- θ (T-17) is recommended for detection of LPAAT- θ of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 LPAAT- θ siRNA (m): sc-62566, LPAAT- θ shRNA Plasmid (m): sc-62566-SH and LPAAT- θ shRNA (m) Lentiviral Particles: sc-62566-V.

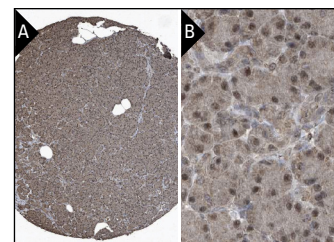
Molecular Weight of LPAAT- θ : 49 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243, LADMAC whole cell lysate or mouse placenta tissue extract.

DATA



LPAAT- θ (T-17): sc-66789. Western blot analysis of LPAAT- θ expression in 3T3-L1 (A) and LADMAC (B) whole cell lysates and mouse placenta tissue extract (C).



LPAAT- θ (T-17): sc-66789. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic and nuclear staining of exocrine glandular and islet cells in low (A) and high (B) resolution. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

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 or our catalog for detailed protocols and support products.