



LPAAT- θ (V-16): sc-66790

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: MAG1 (human) mapping to 4q21.23.

SOURCE

LPAAT- θ (V-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of LPAAT- θ of rat 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-66790 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

LPAAT- θ (V-16) is recommended for detection of LPAAT- θ of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Molecular Weight of LPAAT- θ : 49 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.