

LPAAT- θ (G-3): sc-514164

The Power to Question

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 Thr 389 and 4E-BP1 phosphorylation on Ser 65.

REFERENCES

- West, J., et al. 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., et al. 1997. Human lysophosphatidic acid acyltransferase. cDNA cloning, expression, and localization to chromosome 9q34.3. *J. Biol. Chem.* 272: 20299-20305.
- Bursten, S.L. 1998. Interaction of lipopolysaccharide with a mammalian lysophosphatidate acyltransferase (LPAAT) transfected into *E. coli*, and effect of lipofylline on LPAAT transfected into mammalian cells. *Prog. Clin. Biol. Res.* 397: 345-356.

CHROMOSOMAL LOCATION

Genetic locus: GPAT3 (human) mapping to 4q21.23; Gpat3 (mouse) mapping to 5 E4.

SOURCE

LPAAT- θ (G-3) is a mouse monoclonal antibody raised against amino acids 1-90 mapping at the N-terminus of LPAAT- θ of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LPAAT- θ (G-3) is available conjugated to agarose (sc-514164 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514164 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514164 PE), fluorescein (sc-514164 FITC), Alexa Fluor[®] 488 (sc-514164 AF488), Alexa Fluor[®] 546 (sc-514164 AF546), Alexa Fluor[®] 594 (sc-514164 AF594) or Alexa Fluor[®] 647 (sc-514164 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-514164 AF680) or Alexa Fluor[®] 790 (sc-514164 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

LPAAT- θ (G-3) is recommended for detection of LPAAT- θ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LPAAT- θ siRNA (h): sc-62565, LPAAT- θ siRNA (m): sc-62566, LPAAT- θ shRNA Plasmid (h): sc-62565-SH, LPAAT- θ shRNA Plasmid (m): sc-62566-SH, LPAAT- θ shRNA (h) Lentiviral Particles: sc-62565-V and LPAAT- θ shRNA (m) Lentiviral Particles: sc-62566-V.

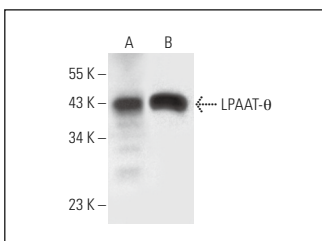
Molecular Weight of LPAAT- θ : 42 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Caki-1 cell lysate: sc-2224 or Hep G2 cell lysate: sc-2227.

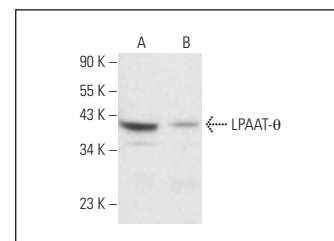
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



LPAAT- θ (G-3): sc-514164. Western blot analysis of LPAAT- θ expression in Hep G2 (A) and Caki-1 (B) whole cell lysates.



LPAAT- θ (G-3): sc-514164. Western blot analysis of LPAAT- θ expression in Hep G2 (A) and NIH/3T3 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Lee, K., et al. 2020. Gomisin N from *Schisandra chinensis* ameliorates lipid accumulation and induces a brown fat-like phenotype through AMP-activated protein kinase in 3T3-L1 adipocytes. *Int. J. Mol. Sci.* 21 pii: E2153.

RESEARCH USE

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