

GPAT2 (E-14): sc-168448

BACKGROUND

GPAT2 (glycerol-3-phosphate acyltransferase 2, mitochondrial), also known as Gm116 or xGPAT1, is an 801 amino acid mitochondrial multi-pass membrane protein belonging to the GPAT/DAPAT family. GPAT2 is highly expressed in testis with lower levels in heart, liver, kidney, spleen and adipose cells. Inhibited by N-ethylmaleimide (NEM), GPAT2 esterifies an acyl-group from acyl-ACP to the sn-1 position of glycerol-3-phosphate, an essential step in glycerolipid biosynthesis. GPAT2 contain a HXXXXD motif, which is critical for acyltransferase activity and may constitute the binding site for the phosphate moiety of the glycerol-3-phosphate. Three isoforms of GPAT2 exist due to alternative splicing events.

REFERENCES

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- Harada, N., Hara, S., Yoshida, M., Zenitani, T., Mawatari, K., Nakano, M., Takahashi, A., Hosaka, T., Yoshimoto, K. and Nakaya, Y. 2007. Molecular cloning of a murine glycerol-3-phosphate acyltransferase-like protein 1 (xGPAT1). *Mol. Cell. Biochem.* 297: 41-51.
- Takeuchi, K. and Reue, K. 2009. Biochemistry, physiology, and genetics of GPAT, AGPAT, and lipin enzymes in triglyceride synthesis. *Am. J. Physiol. Endocrinol. Metab.* 296: E1195-E1209.
- Wydysh, E.A., Medghalchi, S.M., Vadlamudi, A. and Townsend, C.A. 2009. Design and synthesis of small molecule glycerol 3-phosphate acyltransferase inhibitors. *J. Med. Chem.* 52: 3317-3327.

CHROMOSOMAL LOCATION

Genetic locus: GPAT2 (human) mapping to 2q11.1; Gpat2 (mouse) mapping to 2 F1.

SOURCE

GPAT2 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GPAT2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-168448 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GPAT2 (E-14) is recommended for detection of GPAT2 of mouse, rat and human 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).

GPAT2 (E-14) is also recommended for detection of GPAT2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GPAT2 siRNA (h): sc-94904, GPAT2 siRNA (m): sc-140655, GPAT2 shRNA Plasmid (h): sc-94904-SH, GPAT2 shRNA Plasmid (m): sc-140655-SH, GPAT2 shRNA (h) Lentiviral Particles: sc-94904-V and GPAT2 shRNA (m) Lentiviral Particles: sc-140655-V.

Molecular Weight of GPAT2: 89 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.

SELECT PRODUCT CITATIONS

- Liao, C.C., Ou, T.T., Huang, H.P. and Wang, C.J. 2014. The inhibition of oleic acid induced hepatic lipogenesis and the promotion of lipolysis by caffeic acid via up-regulation of AMP-activated kinase. *J. Sci. Food Agric.* 94: 1154-1162.

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.