SANTA CRUZ BIOTECHNOLOGY, INC.

ACOT2 (V-13): sc-82480

BACKGROUND

Acyl-CoA thioesterases (ACOTs) are a group of enzymes that catalyze the hydrolysis of acyl-CoA to form coenzyme A (CoA) and a free fatty acid. Through their catalytic activity, ACOTs are able to regulate the level of fatty acids and acyl-CoAs within the cell. ACOT1 (acyl-CoA thioesterase 1, also known as CTE1) and ACOT2 (acyl-CoA thioesterase 2, also known as PTE2) are members of the ACOT family and exhibit different cellular localization, with ACOT1 existing as a monomer in the cytoplasm and ACOT2 localized primarily to mitochondria. Characteristic of most ACOT proteins, ACOT1 and ACOT2 catalyze the conversion of Palmitoyl-CoA and water to free CoA and palmitate, a reaction that is important for the regulation of intercellular fatty acid levels. ACOT2 is expressed as multiple alternatively spliced isoforms and, like ACOT1, is encoded by a gene which maps to human chromosome 14.

REFERENCES

1. Jones, J.M. and Gould, S.J. 2000. Identification of PTE2, a human peroxisomal long-chain acyl-CoA thioesterase. Biochem. Biophys. Res. Commun. 275: 233-240.
2. Ishizuka, M., Toyama, Y., Watanabe, H., Fujiki, Y., Takeuchi, A., Yamasaki, S., Yuasa, S., Miyazaki, M., Nakajima, N., Taki, S. and Saito, T. 2004. Over-expression of human acyl-CoA thioesterase upregulates peroxisome biogenesis. Exp. Cell Res. 297: 127-141.
3. Westin, M.A., Alexson, S.E. and Hunt, M.C. 2004. Molecular cloning and characterization of two mouse peroxisome proliferator-activated receptor α (PPARα)-regulated peroxisomal acyl-CoA thioesterases. J. Biol. Chem. 279: 21841-21848.
4. Hunt, M.C., Yamada, J., Maltais, L.J., Wright, M.W., Podesta, E.J. and Alexson, S.E. 2005. A revised nomenclature for mammalian acyl-CoA thioesterases/hydrolases. J. Lipid Res. 46: 2029-2032.
5. Hunt, M.C., Rautanen, A., Westin, M.A., Svensson, L.T. and Alexson, S.E. 2006. Analysis of the mouse and human acyl-CoA thioesterase (ACOT) gene clusters shows that convergent, functional evolution results in a reduced number of human peroxisomal ACOTs. FASEB J. 20: 1855-1864.
6. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 609972. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Rudolph, M.C., Neville, M.C. and Anderson, S.M. 2007. Lipid synthesis in lactation: diet and the fatty acid switch. J. Mammary Gland Biol. Neoplasia 12: 269-281.
8. Oka, S., Yoshihara, E., Bizen-Abe, A., Liu, W., Watanabe, M., Yodoi, J. and Masutani, H. 2009. Thioredoxin binding protein-2/thioredoxin-interacting protein is a critical regulator of Insulin secretion and peroxisome proliferator-activated receptor function. Endocrinology 150: 1225-1234.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Acot2 (mouse) mapping to 12 D1.

SOURCE

ACOT2 (V-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ACOT2 of mouse 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-82480 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ACOT2 (V-13) is recommended for detection of ACOT2 of mouse 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); non cross-reactive with family members ACOT1/2 or ACOT4.

Suitable for use as control antibody for ACOT2 siRNA (m): sc-72436, ACOT2 shRNA Plasmid (m): sc-72436-SH and ACOT2 shRNA (m) Lentiviral Particles: sc-72436-V.

Molecular Weight of ACOT2: 53 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.

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.