SANTA CRUZ BIOTECHNOLOGY, INC.

ACOT1/2 (H-76): sc-135341

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 2000. Identification of PTE2, a human peroxisomal long-chain acyl-CoA thioesterase. Biochem. Biophys. Res. Commun. 275: 233-240.
2. Ishizuka, M., et al. 2004. Overexpression of human acyl-CoA thioesterase upregulates peroxisome biogenesis. Exp. Cell Res. 297: 127-141.
3. Westin, M.A., et al. 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., et al. 2005. A revised nomenclature for mammalian acyl-CoA thioesterases/hydrolases. J. Lipid Res. 46: 2029-2032.
5. Hunt, M.C., et al. 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: 6099726. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Rudolph, M.C., et al. 2007. Lipid synthesis in lactation: diet and the fatty acid switch. J. Mammary Gland Biol. Neoplasia 12: 269-281.

CHROMOSOMAL LOCATION

Genetic locus: ACOT1/ACOT2 (human) mapping to 14q24.3.

SOURCE

ACOT1/2 (H-76) is a rabbit polyclonal antibody raised against amino acids 249-324 mapping within an internal region of ACOT1 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.

STORAGE

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

APPLICATIONS

ACOT1/2 (H-76) is recommended for detection of ACOT1/2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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); non cross-reactive with other family members.

Molecular Weight of ACOT1: 46 kDa.

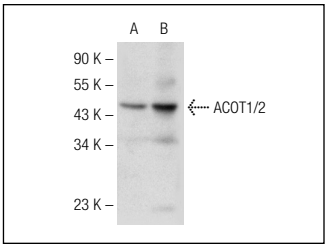
Molecular Weight of ACOT2: 53 kDa.

Positive Controls: HeLa whole cell lysates: sc-2200 or Hep G2 whole cell lysates: sc-2227.

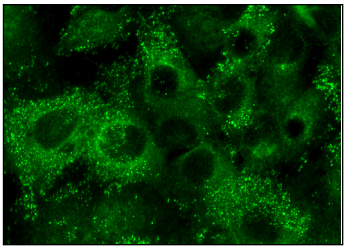
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ACOT1/2 (H-76): sc-135341. Western blot analysis of ACOT1/2 expression in HeLa (**A**) and Hep G2 (**B**) whole cell lysates.



ACOT1/2 (H-76): sc-135341. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic vesicles localization.

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.