SANTA CRUZ BIOTECHNOLOGY, INC.

ACOT4 (I-20): sc-82483

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. Specifically, several ACOT proteins, including ACOT1, ACOT2 and ACOT4, catalyze the conversion of palmitoyl-CoA and water to free CoA and palmitate. ACOT4, also designated peroxisomal acyl coenzyme A thioester hydrolase Ib (PTEIB), is a 421 amino acid protein that is localized to the peroxisome. Highest expression levels of ACOT4 are found in liver and kidney with weaker expression in placenta, heart, and muscle. ACOT4 appears to have obtained the functionality of three mouse genes, ACOT3, ACOT4 and ACOT5, acting on substrates of succinyl-CoA and medium to long chain acyl-CoAs.

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. 2005. The identification of a succinyl-CoA thioesterase suggests a novel pathway for succinate production in peroxisomes. J. Biol. Chem. 280: 38125-38132.
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. 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: Acot4 (mouse) mapping to 12 D3.

SOURCE

ACOT4 (I-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ACOT4 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-82483 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ACOT4 (I-20) is recommended for detection of ACOT4 of mouse and 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); non cross-reactive with family members ACOT1/2 or ACOT2.

Suitable for use as control antibody for ACOT4 siRNA (m): sc-72438, ACOT4 shRNA Plasmid (m): sc-72438-SH and ACOT4 shRNA (m) Lentiviral Particles: sc-72438-V.

Molecular Weight of ACOT4: 46 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.