

ACAT-1 (G-15): sc-161307

BACKGROUND

ACAT-1 (acetyl-Coenzyme A acetyltransferase 1) is a mitochondrial enzyme involved in the formation and degradation of ketone bodies and is necessary for the proper metabolic processing of isoleucine. Rare defects in the gene encoding ACAT-1 lead to β -ketothiolase deficiency, which is characterized by ketoacidotic attacks. ACAT-2 (acetyl-Coenzyme A acetyltransferase 2) is considered a cytosolic protein and is crucial for cholesterol synthesis. Specifically, both Acetoacetyl-CoA specific thiolases, ACAT-1 and ACAT-2 catalyze the formation of acetoacetyl-CoA from two acetyl-CoA molecules. These enzymes are also capable of the reverse reaction, the cleavage of acetoacetyl-CoA into two acetyl-CoA molecules.

REFERENCES

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- Masuno, M., et al. 1996. Assignment of the Human Cytosolic Acetoacetyl-Coenzyme A Thiolase (ACAT-2) Gene to Chromosome 6q25.3-q26. *Genomics* 36: 217-218.
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- Peretó, J., et al. 2005. Phylogenetic analysis of eukaryotic thiolases suggests multiple proteobacterial origins. *J. Mol. Evol.* 61: 65-74.
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- Korman, S.H. 2006. Inborn errors of isoleucine degradation: a review. *Mol. Genet. Metab.* 89: 289-299.
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CHROMOSOMAL LOCATION

Genetic locus: ACAT1 (human) mapping to 11q22.3; Acat1 (mouse) mapping to 9 A5.3.

SOURCE

ACAT-1 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ACAT-1 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-161307 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ACAT-1 (G-15) is recommended for detection of ACAT-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 ACAT-2.

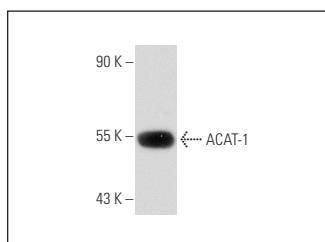
ACAT-1 (G-15) is also recommended for detection of ACAT-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACAT-1 siRNA (h): sc-96390, ACAT-1 siRNA (m): sc-108039, ACAT-1 shRNA Plasmid (h): sc-96390-SH, ACAT-1 shRNA Plasmid (m): sc-108039-SH, ACAT-1 shRNA (h) Lentiviral Particles: sc-96390-V and ACAT-1 shRNA (m) Lentiviral Particles: sc-108039-V.

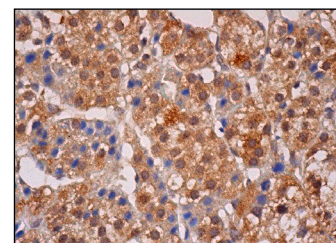
Molecular Weight of ACAT-1: 50 kDa.

Positive Controls: THP-1 cell lysate: sc-2238.

DATA



ACAT-1 (G-15): sc-161307. Western blot analysis of ACAT-1 expression in THP-1 whole cell lysate.



ACAT-1 (G-15): sc-161307. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Layeghkhavidaki, H., et al. 2014. Inhibitory action of benzo[α]pyrene on hepatic lipoprotein receptors *in vitro* and on liver lipid homeostasis in mice. *PLoS ONE* 9: e102991.

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.