

Store at
-20°C

ACAT1 Antibody

#44276

Cell Signaling
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orders@cellsignal.comEntrez-Gene ID #38
UniProt ID #P24752

New 11/17

For Research Use Only. Not For Use In Diagnostic Procedures.**Applications**
W, IP
Endogenous**Species Cross-Reactivity***
H, M, R**Molecular Wt.**
42 kDa**Source**
Rabbit**

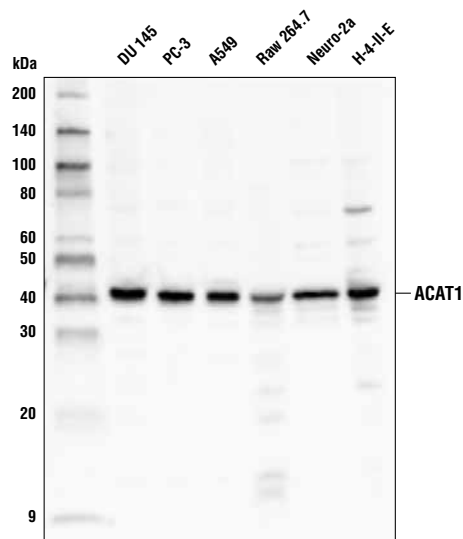
Background: Mitochondrial acetyl-coenzyme A (CoA) acetyltransferase 1 (ACAT1) plays a pivotal role in ketogenesis and branched chain amino acid metabolism (1-3). Research studies have demonstrated that ACAT1 also plays a key role in carbohydrate metabolism of tumor cells by directly acetylating and inhibiting the activity of the pyruvate dehydrogenase complex (PDH) and PDH phosphatase, which leads to decreased carbon flux through PDH and increased glycolysis (4,5). Mechanistically, it has been shown that numerous oncogenic tyrosine kinases directly phosphorylate ACAT1 at Y407, which promotes tetramerization and stabilization of the active enzyme in order to drive glycolysis and tumor growth (5).

Background References:

- (1) Balasse, E.O. and Féry, F. (1989) *Diabetes Metab Rev* 5, 247-70.
- (2) Haapalainen, A.M. et al. (2006) *Trends Biochem Sci* 31, 64-71.
- (3) Haapalainen, A.M. et al. (2007) *Biochemistry* 46, 4305-21.
- (4) Fan, J. et al. (2014) *Mol Cell* 53, 534-48.
- (5) Fan, J. et al. (2016) *Mol Cell* 64, 859-874.

Specificity/Sensitivity: ACAT1 Antibody recognizes endogenous levels of total ACAT1 protein. This antibody does not cross-react with ACAT2 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human ACAT1 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell lines using ACAT1 Antibody.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by western blot.
**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

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IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

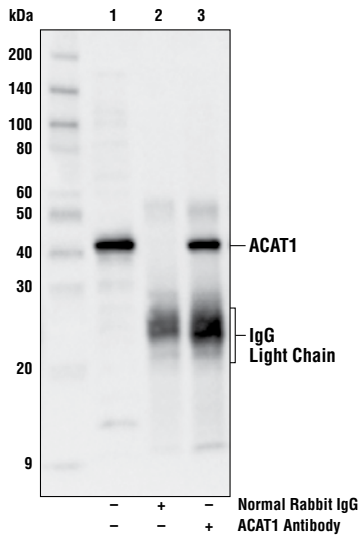
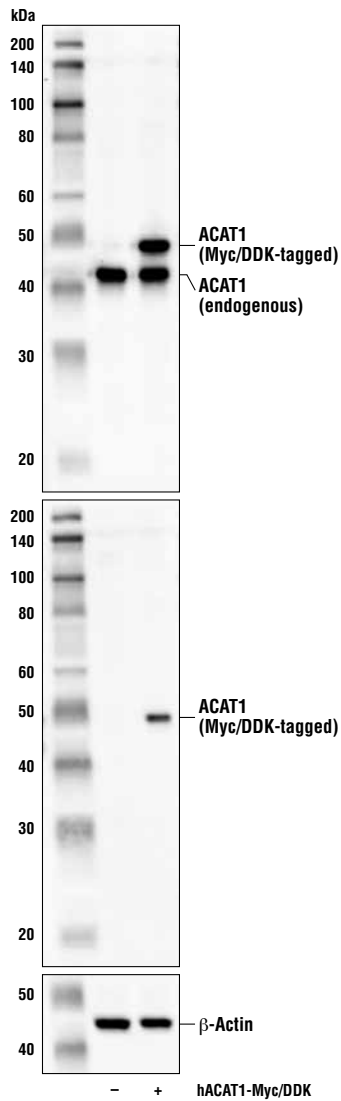
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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species** enclosed in parentheses are predicted to react based on 100% homology.



Immunoprecipitation of ACAT1 from 293T cell extracts. Lane 1 is 10% input, lane 2 is Normal Rabbit IgG #2729, and lane 3 is ACAT1 Antibody. Western blot analysis was performed using ACAT1 Antibody. Anti-Rabbit light chain-specific secondary antibody was used for detection.

Western blot analysis of extracts from 293T cells, mock transfected (-) or transfected with a construct expressing Myc/DDK-tagged full-length human ACAT1 protein (hACAT1-Myc/DDK; +), using ACAT1 Antibody (upper), DYKDDDDK Tag Antibody #2368 (middle), and β -Actin (D6A8) Rabbit mAb #8457 (lower).

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