

# ACAA1 (C-8): sc-514051

## BACKGROUND

Mammalian tissues contain five types of thiolases, all of which participate in the metabolism of various compounds throughout the body. ACAA1 (acetyl-Coenzyme A acyltransferase 1), also known as peroxisomal 3-oxoacyl-CoA thiolase, is a 424 amino acid member of the thiolase family of enzymes and is involved in lipid metabolism. Localized to the peroxisome, ACAA1 catalyzes the conversion of acyl-CoA and acetyl-CoA to 3-oxoacyl-CoA in the fatty acid oxidation pathway. ACAA1 shows high enzymatic activity in liver, kidney, intestine and white adipose tissue in rats, where it exists as two types, namely type A and type B. Human ACAA1 shares 86% amino acid identity with its rat counterpart, suggesting a conserved function for ACAA1 among different species.

## REFERENCES

1. Miyazawa, S., et al. 1981. Properties of peroxisomal 3-ketoacyl-CoA thiolase from rat liver. *J. Biochem.* 90: 511-519.
2. Hijikata, M., et al. 1987. Structural analysis of cDNA for rat peroxisomal 3-ketoacyl-CoA thiolase. *J. Biol. Chem.* 262: 8151-8158.
3. Bodnar, A.G. and Rachubinski, R.A. 1990. Cloning and sequence determination of cDNA encoding a second rat liver peroxisomal 3-ketoacyl-CoA thiolase. *Gene* 91: 193-199.
4. Hijikata, M., et al. 1990. Rat peroxisomal 3-ketoacyl-CoA thiolase gene. Occurrence of two closely related but differentially regulated genes. *J. Biol. Chem.* 265: 4600-4606.

## CHROMOSOMAL LOCATION

Genetic locus: ACAA1 (human) mapping to 3p22.2; Acaa1 (mouse) mapping to 9 F3.

## SOURCE

ACAA1 (C-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 7-27 near the N-terminus of ACAA1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACAA1 (C-8) is available conjugated to agarose (sc-514051 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514051 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514051 PE), fluorescein (sc-514051 FITC), Alexa Fluor<sup>®</sup> 488 (sc-514051 AF488), Alexa Fluor<sup>®</sup> 546 (sc-514051 AF546), Alexa Fluor<sup>®</sup> 594 (sc-514051 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-514051 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-514051 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-514051 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514051 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

ACAA1 (C-8) is recommended for detection of ACAA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for ACAA1 siRNA (h): sc-78077, ACAA1 siRNA (m): sc-140787, ACAA1 shRNA Plasmid (h): sc-78077-SH, ACAA1 shRNA Plasmid (m): sc-140787-SH, ACAA1 shRNA (h) Lentiviral Particles: sc-78077-V and ACAA1 shRNA (m) Lentiviral Particles: sc-140787-V.

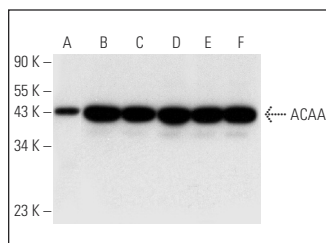
Molecular Weight of ACAA1: 44 kDa.

Positive Controls: A549 cell lysate: sc-2413, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

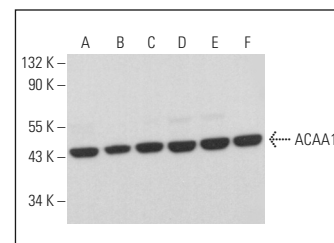
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



ACAA1 (C-8): sc-514051. Western blot analysis of ACAA1 expression in human liver tissue extract (A) and A549 (B), HeLa (C), Hep G2 (D), RT-4 (E) and U-251-MG (F) whole cell lysates.



ACAA1 (C-8): sc-514051. Western blot analysis of ACAA1 expression in RT-4 (A), SK-BR-3 (B), MCF7 (C), RAW 264.7 (D), 3T3-L1 (E) and KNRK (F) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Li, G., et al. 2019. MicroRNA-15a regulates the differentiation of intramuscular preadipocytes by targeting ACAA1, ACOX1 and SCP2 in chickens. *Int. J. Mol. Sci.* 20 pii: E4063.

## STORAGE

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

## RESEARCH USE

For research use only, not for use in diagnostic procedures.