

# SOAT1 (A-11): sc-136959

## BACKGROUND

SOAT1 (sterol O-acyltransferase-1), also designated ACAT1, is a homotetrameric enzyme that catalyzes the formation of cholesterol esters from cholesterol and long chain fatty acyl-coenzyme A (acyl-CoA). The gene encoding human SOAT1 maps to chromosome 1 and is expressed as a protein that localizes to the endoplasmic reticulum (ER) in several tissues, including liver, kidney, adrenal glands and macrophages. SOAT1 is involved in cellular cholesterol homeostasis as well as in foam cell formation and the subsequent progression of atherosclerosis. Several SOAT inhibitors have been developed for the treatment of atherosclerosis. SOAT2 (sterol O-acyltransferase-2), also known as ACAT2 (acyl-CoA:cholesterol acyltransferase-2), participates in lipoprotein assembly, catalyzing cholesterol esterification in mammalian cells. SOAT2 is an integral membrane protein that localizes to the endoplasmic reticulum of human intestinal cells. SOAT2 deficiency contributes to severe mental retardation and hypotonus.

## REFERENCES

- Chang, C.C., et al. 1998. Recombinant acyl-CoA:cholesterol acyltransferase-1 (ACAT1) purified to essential homogeneity utilizes cholesterol in mixed micelles or in vesicles in a highly cooperative manner. *J. Biol. Chem.* 273: 35132-35141.
- Li, B.L., et al. 1999. Human acyl-CoA:cholesterol acyltransferase-1 (ACAT1) gene organization and evidence that the 4.3-kilobase ACAT1 mRNA is produced from two different chromosomes. *J. Biol. Chem.* 274: 11060-11071.
- Lin, S., et al. 1999. Human acyl-CoA:cholesterol acyltransferase-1 in the endoplasmic reticulum contains seven transmembrane domains. *J. Biol. Chem.* 274: 23276-23285.
- Yu, C., et al. 1999. Human acyl-CoA:cholesterol acyltransferase-1 is a homotetrameric enzyme in intact cells and *in vitro*. *J. Biol. Chem.* 274: 36139-36145.
- Chang, C.C., et al. 2000. Immunological quantitation and localization of ACAT1 and ACAT2 in human liver and small intestine. *J. Biol. Chem.* 275: 28083-28092.

## CHROMOSOMAL LOCATION

Genetic locus: SOAT1 (human) mapping to 1q25.2; Soat1 (mouse) mapping to 1 G3.

## SOURCE

SOAT1 (A-11) is a mouse monoclonal antibody raised against amino acids 1-125 of SOAT1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain 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

SOAT1 (A-11) is recommended for detection of SOAT1 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 SOAT1 siRNA (h): sc-29624, SOAT1 siRNA (m): sc-29625, SOAT1 shRNA Plasmid (h): sc-29624-SH, SOAT1 shRNA Plasmid (m): sc-29625-SH, SOAT1 shRNA (h) Lentiviral Particles: sc-29624-V and SOAT1 shRNA (m) Lentiviral Particles: sc-29625-V.

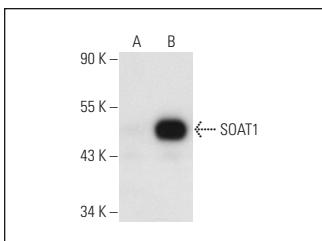
Molecular Weight of SOAT1: 50 kDa.

Positive Controls: rat kidney extract: sc-2394, THP-1 cell lysate: sc-2238 or SOAT1 (h): 293T Lysate: sc-113987.

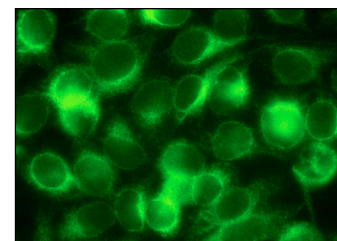
## RECOMMENDED SUPPORT REAGENTS

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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



SOAT1 (A-11): sc-136959. Western blot analysis of SOAT1 expression in non-transfected: sc-117752 (A) and human SOAT1 transfected: sc-113987 (B) 293T whole cell lysates.



SOAT1 (A-11): sc-136959. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Chi, K.C., et al. 2019. An adult drosophila glioma model for studying pathometabolic pathways of gliomagenesis. *Mol. Neurobiol.* 56: 4589-4599.
- Volkmar, N., et al. 2019. The ER membrane protein complex promotes biogenesis of sterol-related enzymes maintaining cholesterol homeostasis. *J. Cell Sci.* 132: jcs223453.

## RESEARCH USE

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