

# SOAT1 (S-20): sc-21030

## 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. 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 coenzyme A), 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

1. 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.
2. 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.
3. 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.
4. 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.
5. 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 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SOAT1 of human 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-21030 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

SOAT1 (S-20) is recommended for detection of SOAT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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.

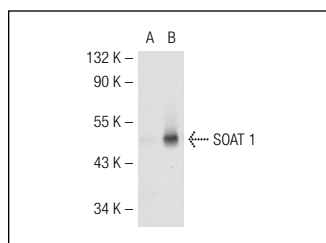
Molecular Weight of SOAT1: 50 kDa.

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

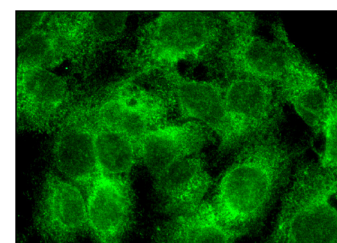
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



SOAT1 (S-20): sc-21030. Western blot analysis of SOAT1 expression in non-transfected: sc-117752 (A) and human SOAT1 transfected: sc-113987 (B) 293T whole cell lysates.



SOAT1 (S-20): sc-21030. Immunofluorescence staining of formalin-fixed HepG2 cells showing cytoplasmic localization.

## STORAGE

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

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Try **SOAT1 (D-1): sc-137013** or **SOAT1 (ACAT-1): sc-69836**, our highly recommended monoclonal alternatives to SOAT1 (S-20).