SANTA CRUZ BIOTECHNOLOGY, INC.

SOAT1 (D-1): sc-137013

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 lipo-protein 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.

CHROMOSOMAL LOCATION

Genetic locus: SOAT1 (human) mapping to 1q25.2.

SOURCE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SOAT1 (D-1) is available conjugated to agarose (sc-137013 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-137013 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137013 PE), fluorescein (sc-137013 FITC), Alexa Fluor® 488 (sc-137013 AF488), Alexa Fluor® 546 (sc-137013 AF546), Alexa Fluor® 594 (sc-137013 AF594) or Alexa Fluor® 647 (sc-137013 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137013 AF680) or Alexa Fluor® 790 (sc-137013 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SOAT1 (D-1) is recommended for detection of SOAT1 of 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), 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).

Suitable for use as control antibody for SOAT1 siRNA (h): sc-29624, SOAT1 shRNA Plasmid (h): sc-29624-SH and SOAT1 shRNA (h) Lentiviral Particles: sc-29624-V.

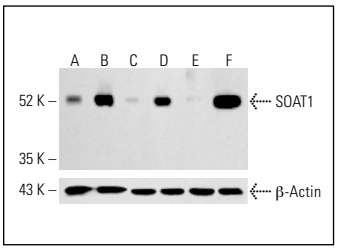
Molecular Weight of SOAT1: 50 kDa.

Positive Controls: THP-1 cell lysate: sc-2238 or chemically-treated HCT-116 whole cell lysate.

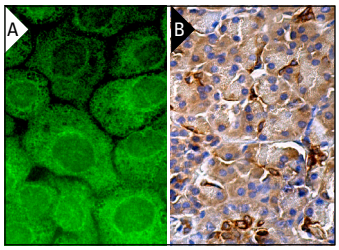
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



SOAT1 (D-1): sc-137013. Western blot analysis of SOAT1 expression in untreated HeLa (**A**), chemically-treated HeLa (**B**), untreated K-562 (**C**), chemically-treated K-562 (**D**), untreated HCT-116 (**E**) and chemically-treated HCT-116 (**F**) whole cell lysates. Detection reagent used: m-IgG_1 BP-HRP: sc-525408. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



SOAT1 (D-1): sc-137013. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells and Islets of Langerhans (**B**).

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.