

SCD (A00093.01): sc-81776

BACKGROUND

Stearyl-CoA desaturase (SCD) is a microsomal enzyme required for the synthesis of oleate and palmitoleate, which are the major monounsaturated fatty acids of membrane phospholipids, triglycerides and cholesterol esters. SCD plays a major role in the triacylglycerol and phospholipid secretion process and in mechanisms of cellular cholesterol homeostasis. It is subject to rapid turnover in the cell and, as such, represents a model for studying selective degradation of short-lived proteins of the ER. SCD is also an important regulator of membrane fluidity. An increase in expression levels of SCD is observed in cells which are induced to differentiate into adipocytes and in certain tumor cell lines. Due to gene duplication events, the number of genes in the SCD family differs between species. Their expression patterns are affected by the level of unsaturated fatty acids in the diet of the animal.

CHROMOSOMAL LOCATION

Genetic locus: SCD (human) mapping to 10q24.31; Scd1/Scd2/Scd3/Scd4 (mouse) mapping to 19 C3.

SOURCE

SCD (A00093.01) is a mouse monoclonal antibody raised against full length recombinant SCD of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

SCD (A00093.01) is recommended for detection of SCD of human origin and SCD1, SCD2, SCD3 and SCD4 of mouse and rat 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 SCD siRNA (h): sc-36464, SCD1/2/3/4 siRNA (m): sc-63288, SCD shRNA Plasmid (h): sc-36464-SH, SCD1/2/3/4 shRNA Plasmid (m): sc-63288-SH, SCD shRNA (h) Lentiviral Particles: sc-36464-V and SCD1/2/3/4 shRNA (m) Lentiviral Particles: sc-63288-V.

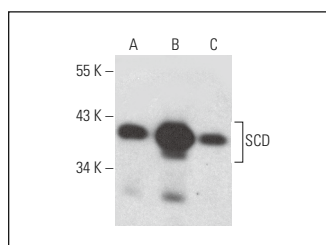
Molecular Weight of SCD: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or SK-MEL-28 cell lysate: sc-2236.

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



SCD (A00093.01): sc-81776. Western blot analysis of SCD expression in HeLa (A), Hep G2 (B) and SK-MEL-28 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Van Beersel, G., et al. 2013. Activation of sterol-responsive element binding proteins in a sucrose-induced model of lysosomal storage. *Open Pathol. J.* 7: 12.
- Czumaj, A., et al. 2018. Cyclopropaneoctanoic acid 2-hexyl upregulates the expression of genes responsible for lipid synthesis and release in human hepatic Hep G2 cells. *Lipids* 53: 345-351.
- Li, P., et al. 2021. Gut inflammation exacerbates high-fat diet induced steatosis by suppressing VLDL-TG secretion through HNF4α pathway. *Free Radic. Biol. Med.* 172: 459-469.
- Li, P., et al. 2022. Baicalein prevents fructose-induced hepatic steatosis in rats: in the regulation of fatty acid *de novo* synthesis, fatty acid elongation and fatty acid oxidation. *Front. Pharmacol.* 13: 917329.
- Ding, M., et al. 2022. Tumor microenvironment acidity triggers lipid accumulation in liver cancer via SCD1 activation. *Mol. Cancer Res.* 20: 810-822.
- Yao, L., et al. 2023. Oleonic acid inhibits SCD1 gene expression to ameliorate fructose-induced hepatosteatosis through SREBP1c-dependent and -independent mechanisms. *Mol. Nutr. Food Res.* 67: e2200533.
- Sun, H., et al. 2024. Ubiquitin-specific protease 22 controls melanoma metastasis and vulnerability to ferroptosis through targeting SIRT1/PTEN/PI3K signaling. *MedComm* 5: e684.

RESEARCH USE

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