SANTA CRUZ BIOTECHNOLOGY, INC.

SCD (D-5): sc-515875

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Stearoyl-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 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 158-177 within an internal region of SCD1 of mouse origin.

PRODUCT

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

SCD (D-5) is available conjugated to agarose (sc-515875 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515875 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515875 PE), fluorescein (sc-515875 FITC), Alexa Fluor® 488 (sc-515875 AF488), Alexa Fluor® 546 (sc-515875 AF546), Alexa Fluor® 594 (sc-515875 AF594) or Alexa Fluor® 647 (sc-515875 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515875 AF680) or Alexa Fluor® 790 (sc-515875 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SCD (D-5) is recommended for detection of SCD of human origin, SCD1, SCD2, SCD3 and SCD4 of mouse origin, and the corresponding rat homologs 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 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.

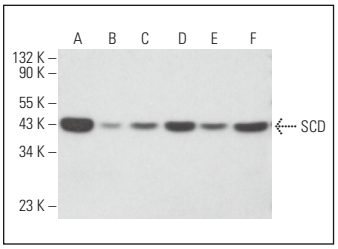
Molecular Weight of SCD: 40 kDa.

Positive Controls: SCD1 (m): 293T Lysate: sc-123378, c4 whole cell lysate: sc-364186 or 3T3-L1 cell lysate: sc-2243.

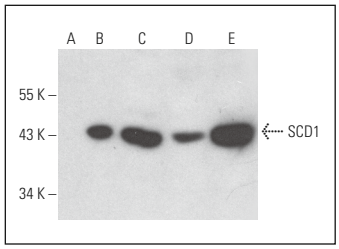
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SCD (D-5): sc-515875. Western blot analysis of SCD expression in C2C12 (**A**), Neuro-2A (**B**), PC-12 (**C**), C6 (**D**), P19 (**E**) and Hep G2 (**F**) whole cell lysates.



SCD (D-5): sc-515875. Western blot analysis of SCD1 expression in non-transfected 293T: sc-117752 (**A**), mouse SCD1 transfected 293T: sc-123378 (**B**), CHO-K1 (**C**), c4 (**D**) and 3T3-L1 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ni, W., et al. 2020. USP7 mediates pathological hepatic *de novo* lipogenesis through promoting stabilization and transcription of ZNF638. Cell Death Dis. 11: 843.
2. Kong, L., et al. 2021. Yangonin modulates lipid homeostasis, ameliorates cholestasis and cellular senescence in alcoholic liver disease via activating nuclear receptor FXR. Phytomedicine 90: 153629.
3. Shao, Y., et al. 2022. A novel small compound TOIDC suppresses lipogenesis via SREBP1-dependent signaling to curb MAFLD. Nutr. Metab. 19: 80.

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.

PROTOCOLS

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