

# SCD (CD.E10): sc-58420

## 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.

## REFERENCES

1. Ntambi, J.M., et al. 1988. Differentiation-induced gene expression in 3T3-L1 preadipocytes. Characterization of a differentially expressed gene encoding stearoyl-CoA desaturase. *J. Biol. Chem.* 263: 17291-17300.
2. Kaestner, K.H., et al. 1989. Differentiation-induced gene expression in 3T3-L1 preadipocytes. A second differentially expressed gene encoding stearoyl-CoA desaturase. *J. Biol. Chem.* 264: 14755-14761.

## CHROMOSOMAL LOCATION

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

## SOURCE

SCD (CD.E10) is a mouse monoclonal antibody raised against full length recombinant SCD of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2b</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

SCD (CD.E10) 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.

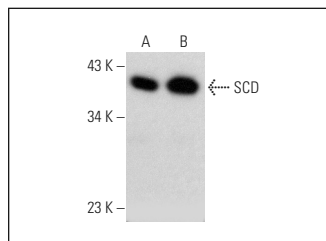
Molecular Weight of SCD: 40 kDa.

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

## STORAGE

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

## DATA



SCD (CD.E10): sc-58420. Western blot analysis of SCD expression in SK-MEL-28 (A) and Hep G2 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Holder, A.M., et al. 2013. High stearoyl-CoA desaturase 1 expression is associated with shorter survival in breast cancer patients. *Breast Cancer Res. Treat.* 137: 319-327.
2. Hollander, K.S., et al. 2014. Dietary enrichment with  $\alpha$ -linolenic acid during pregnancy attenuates Insulin resistance in adult offspring in mice. *Arch. Physiol. Biochem.* 120: 99-111.
3. Kudinov, A.E., et al. 2016. Musashi-2 (MSI2) supports TGF- $\beta$  signaling and inhibits claudins to promote non-small cell lung cancer (NSCLC) metastasis. *Proc. Natl. Acad. Sci. USA* 113: 6955-6960.
4. Lee, J.H., et al. 2017. RNF20 suppresses tumorigenesis by inhibiting SREBP1c-PTTG1 axis in kidney cancer. *Mol. Cell. Biol.* 37: e00265-17.
5. Ng, P.K., et al. 2018. Systematic functional annotation of somatic mutations in cancer. *Cancer Cell* 33: 450-462.e10.
6. Dominguez-Gomez, G., et al. 2019. Growth inhibition and transcriptional effects of ribavirin in lymphoma. *Oncol. Rep.* 42: 1248-1256.
7. Chen, F., et al. 2020. Classic and targeted anti-leukaemic agents interfere with the cholesterol biogenesis metagene in acute myeloid leukaemia: therapeutic implications. *J. Cell. Mol. Med.* 24: 7378-7392.
8. Romano, A., et al. 2021. Chronic oleoylethanolamide treatment decreases hepatic triacylglycerol level in rat liver by a PPAR $\gamma$ /SREBP-mediated suppression of fatty acid and triacylglycerol synthesis. *Nutrients* 13: 394.
9. Wang, J., et al. 2022. JMJD1C regulates megakaryopoiesis in *in vitro* models through the Actin network. *Cells* 11: 3660.
10. Lu, J., et al. 2023. The role of CYP1A1/2 in cholesterol ester accumulation provides a new perspective for the treatment of hypercholesterolemia. *Acta Pharm. Sin. B* 13: 648-661.

## RESEARCH USE

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