

SCD1 (S-15): sc-14719

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: Scd1/Scd3 (mouse) mapping to 19 C3.

SOURCE

SCD1 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SCD1 of mouse 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-14719 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SCD1 (S-15) is recommended for detection of SCD1 and, to a lesser extent, SCD3 of mouse 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), 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 SCD1/2/3/4 siRNA (m): sc-63288, SCD1/2/3/4 shRNA Plasmid (m): sc-63288-SH and SCD1/2/3/4 shRNA (m) Lentiviral Particles: sc-63288-V.

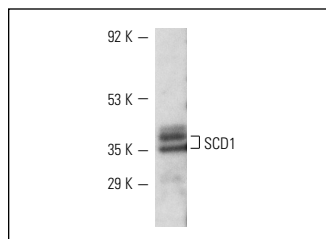
Molecular Weight of SCD1: 37 kDa.

Positive Controls: mouse liver extract: sc-2256.

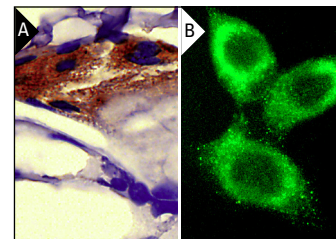
STORAGE

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

DATA



SCD1 (S-15): sc-14719. Western blot analysis of SCD1 expression in mouse liver extract.



SCD1 (S-15): sc-14719. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse mammary gland showing cytoplasmic localization (A). Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2006. Liver X receptor agonist TO-901317 upregulates SCD1 expression in renal proximal straight tubule. *Am. J. Physiol. Renal Physiol.* 290: F1065-F1073.
2. Lapouge, G., et al. 2011. Identifying the cellular origin of squamous skin tumors. *Proc. Natl. Acad. Sci. USA* 108: 7431-7436.
3. Gonzalez, M., et al. 2011. Defining a relationship between dietary fatty acids and the cytochrome P450 system in a mouse model of fatty liver disease. *Physiol. Genomics* 43: 121-135.
4. Marmugi, A., et al. 2012. Low doses of bisphenol A induce gene expression related to lipid synthesis and trigger triglyceride accumulation in adult mouse liver. *Hepatology* 55: 395-407.
5. Flowers, M.T., et al. 2012. Combined deletion of SCD1 from adipose tissue and liver does not protect mice from obesity. *J. Lipid Res.* 53: 1646-1653.
6. Sieber, J., et al. 2013. Susceptibility of podocytes to palmitic acid is regulated by stearoyl-CoA desaturases 1 and 2. *Am. J. Pathol.* 183: 735-744.
7. Gupta, S., et al. 2014. Cystathionine β-synthase-deficient mice thrive on a low-methionine diet. *FASEB J.* 28: 781-790.
8. Zhang, X., et al. 2014. Liver X receptor activation increases hepatic fatty acid desaturation by the induction of SCD1 expression through an LXRα-SREBP1c-dependent mechanism. *J. Diabetes* 6: 212-220.
9. Tong, X., et al. 2016. E4BP4 is an insulin-induced stabilizer of nuclear SREBP-1c and promotes SREBP-1c-mediated lipogenesis. *J. Lipid Res.* 57: 1219-1230.

RESEARCH USE

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