SANTA CRUZ BIOTECHNOLOGY, INC.

SCD (E-14): sc-30435

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.
3. Li, J., et al. 1994. Partial characterization of a cDNA for human stearoyl-CoA desaturase and changes in its mRNA expression in some normal and malignant tissues. Int. J. Cancer 57: 348-352.
4. Diot, C., et al. 2000. Stearoyl-CoA desaturase 1 coding sequences and antisense RNA affect lipid secretion in transfected chicken LMH hepatoma cells. Arch. Biochem. Biophys. 380: 243-250.
5. Kim, Y.C., et al. 2000. Differential regulation of the stearoyl-CoA desaturase genes by thiazolidinediones in 3T3-L1 adipocytes. J. Lipid Res. 41: 1310-1316.

CHROMOSOMAL LOCATION

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

SOURCE

SCD (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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-30435 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

SCD (E-14) 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), 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); may cross-react with SCD5.

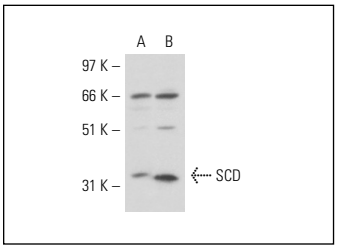
SCD (E-14) is also recommended for detection of SCD in additional species, including equine, canine, bovine, porcine and avian.

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.

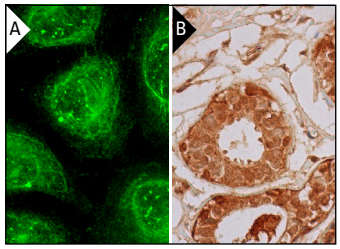
Molecular Weight of SCD: 40 kDa.

Positive Controls: c4 whole cell lysate: sc-364186 or CHO-K1 cell lysate: sc-3809.

DATA



SCD (E-14): sc-30435. Western blot analysis of SCD expression in c4 (**A**) and CHO-K1 (**B**) whole cell lysates.



SCD (E-14): sc-30435. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and nuclear staining of glandular cells and myoepithelial cells (**B**).

RESEARCH USE

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

PROTOCOLS

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