

SPTLC1 (H-1): sc-374143

BACKGROUND

SPTLC1 (serine palmitoyltransferase 1), also known as LCB1, and SPTLC2 (serine palmitoyltransferase 2), also known as LCB2, together catalyze sphingolipid biosynthesis by converting L-serine and palmitoyl-CoA to 3-oxosphinganine, utilizing pyridoxal 5'-phosphate as a cofactor. Increases in transepidermal water loss triggers upregulation of serine palmitoyltransferase mRNA expression in humans. Deficiencies in wild type SPTLC1 and SPTLC2 can lead to hereditary sensory neuropathy, atopic eczema, and psoriasis.

CHROMOSOMAL LOCATION

Genetic locus: SPTLC1 (human) mapping to 9q22.31; Sptlc1 (mouse) mapping to 13 B1.

SOURCE

SPTLC1 (H-1) is a mouse monoclonal antibody raised against amino acids 174-473 mapping at the C-terminus of SPTLC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SPTLC1 (H-1) is available conjugated to agarose (sc-374143 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374143 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374143 PE), fluorescein (sc-374143 FITC), Alexa Fluor® 488 (sc-374143 AF488), Alexa Fluor® 546 (sc-374143 AF546), Alexa Fluor® 594 (sc-374143 AF594) or Alexa Fluor® 647 (sc-374143 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374143 AF680) or Alexa Fluor® 790 (sc-374143 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

SPTLC1 (H-1) is recommended for detection of SPTLC1 of mouse, rat and human origin 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 SPTLC1 siRNA (h): sc-106561, SPTLC1 siRNA (m): sc-153804, SPTLC1 shRNA Plasmid (h): sc-106561-SH, SPTLC1 shRNA Plasmid (m): sc-153804-SH, SPTLC1 shRNA (h) Lentiviral Particles: sc-106561-V and SPTLC1 shRNA (m) Lentiviral Particles: sc-153804-V.

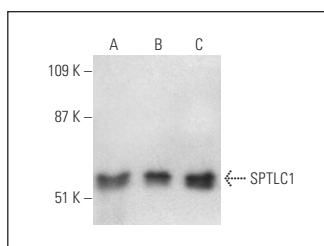
Molecular Weight of SPTLC1: 55 kDa.

Positive Controls: rat kidney extract: sc-2394, Hep G2 cell lysate: sc-2227 or MDA-MB-231 cell lysate: sc-2232.

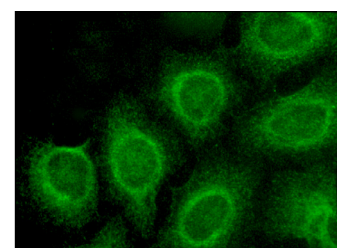
RECOMMENDED SUPPORT REAGENTS

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



SPTLC1 (H-1) HRP: sc-374143 HRP. Direct western blot analysis of SPTLC1 expression in Hep G2 (A), MDA-MB-231 (B) and 293T (C) whole cell lysates.



SPTLC1 (H-1): sc-374143. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Clarke, B.A., et al. 2019. The Ormdl genes regulate the sphingolipid synthesis pathway to ensure proper myelination and neurologic function in mice. *Elife* 8: e51067.
- Bugajev, V., et al. 2021. ORMDL2 deficiency potentiates the ORMDL3-dependent changes in mast cell signaling. *Front. Immunol.* 11: 591975.
- Bugajev, V., et al. 2021. Crosstalk between ORMDL3, serine palmitoyltransferase, and 5-lipoxygenase in the sphingolipid and eicosanoid metabolic pathways. *J. Lipid Res.* 62: 100121.
- Sen, P., et al. 2021. Quantitative genome-scale metabolic modeling of human CD4⁺ T cell differentiation reveals subset-specific regulation of glycosphingolipid pathways. *Cell Rep.* 37: 109973.
- Kuo, A., et al. 2022. Murine endothelial serine palmitoyltransferase 1 (SPTLC1) is required for vascular development and systemic sphingolipid homeostasis. *Elife* 11: e78861.

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.