SANTA CRUZ BIOTECHNOLOGY, INC.

SPTLC3 siRNA (h): sc-76574

BACKGROUND

The SPT (serine palmitoyltransferase) complex is responsible for catalyzing the rate-limiting step of sphingolipid biosynthesis and exists as a heterodimer consisting of SPTLC1, SPTLC2 and SPTLC3 (serine palmitoyltransferase 1,2 and 3, respectively). SPTLC3, which is also known as serine-palmitoyl-CoA transferase 3, long chain base biosynthesis protein 3, long chain base biosynthesis protein 2b, FLJ11112, LCB3, SPT3, SPTLC2L, C20orf38, FLJ90790, dJ718P11 or dJ718P11.1, is a 552 amino acid single-pass membrane protein. SPTLC3 is expressed in most tissues (excluding bone marrow and peripheral blood cells), with highest levels in kidney, skin, liver, heart and uterus. SPTLC3 is a member of the class-II pyridoxal-phosphate-dependent aminotransferase family and contains two isoforms as a result of alternative splicing. The gene encoding SPTLC3 maps to human chromosome 20p12.1.

REFERENCES

1. Weiss, B. and Stoffel, W. 1997. Human and murine serine-palmitoyl-CoA transferase—cloning, expression and characterization of the key enzyme in sphingolipid synthesis. Eur. J. Biochem. 249: 239-247.
2. Batheja, A.D., Uhlinger, D.J., Carton, J.M., Ho, G. and D'Andrea, M.R. 2003. Characterization of serine palmitoyltransferase in normal human tissues. J. Histochem. Cytochem. 51: 687-696.
3. Hornemann, T., Richard, S., Rütti, M.F., Wei, Y. and von Eckardstein, A. 2006. Cloning and initial characterization of a new subunit for mammalian serine-palmitoyltransferase. J. Biol. Chem. 281: 37275-37281.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611120. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Hornemann, T., Penno, A., Rutti, M.F., Ernst, D., Kivrak-Pfiffner, F., Rohrer, L. and von Eckardstein, A. 2009. The SPTLC3 subunit of serine-palmitoyltransferase generates short chain sphingoid bases. J. Biol. Chem. 284: 26322-26330.
6. Han, G., Gupta, S.D., Gable, K., Niranjanakumari, S., Moitra, P., Eichler, F., Brown, R.H., Harmon, J.M. and Dunn, T.M. 2009. Identification of small subunits of mammalian serine palmitoyltransferase that confer distinct acyl-CoA substrate specificities. Proc. Natl. Acad. Sci. USA 106: 8186-8191.

CHROMOSOMAL LOCATION

Genetic locus: SPTLC3 (human) mapping to 20p12.1.

PRODUCT

SPTLC3 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPTLC3 shRNA Plasmid (h): sc-76574-SH and SPTLC3 shRNA (h) Lentiviral Particles: sc-76574-V as alternate gene silencing products.

For independent verification of SPTLC3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76574A, sc-76574B and sc-76574C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SPTLC3 siRNA (h) is recommended for the inhibition of SPTLC3 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SPTLC3 gene expression knockdown using RT-PCR Primer: SPTLC3 (h)-PR: sc-76574-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.