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ACSVL5 shRNA (h) Lentiviral Particles: sc-44585-V

BACKGROUND

Acyl-coenzyme A synthetases (ACSSs) are a large family of related enzymes known to catalyze the fundamental initial reaction in fatty acid metabolism. The ACS family is roughly characterized based on fatty acid chain length preference among different members. The nomenclature in the ACS family reflects this relationship and includes short-chain ACS (ACSS), medium-chain ACS (ACSM), long-chain ACS (ACSL) and very long-chain ACS (ACSVL). ACSVL family members are capable of activating both long-chain fatty acids (LCFAs) and very long-chain (VLCFAs) fatty acids. There are six members of the human ACSVL subfamily which have been described as solute carrier family 27A (SLC27A) gene products. They represent a group of evolutionarily conserved fatty acid transport proteins (FATPs) recognized for their role in facilitating translocation of long-chain fatty acids across the plasma membrane. The family nomenclature has recently been unified with their respective acyl-CoA synthetase family designations: ACSVL1 (FATP2), ACSVL2 (FATP6), ACSVL3 (FATP3), ACSVL4 (FATP4), ACSVL5 (FATP1) and ACSVL6 (FATP5). ACSVLs have unique expression patterns and are found in major organs of fatty acid metabolism, such as adipose tissue, liver, heart and kidney.

REFERENCES

- Schaffer, J.E., et al. 1994. Expression cloning and characterization of a novel adipocyte long chain fatty acid transport protein. *Cell* 79: 427-436.
- Hirsch, D., et al. 1998. A family of fatty acid transporters conserved from mycobacterium to man. *Proc. Natl. Acad. Sci. USA* 95: 8625-8629.
- Abumrad, N., et al. 1999. Membrane proteins implicated in long-chain fatty acid uptake by mammalian cells: CD36, FATP, FABPm. *Biochim. Biophys. Acta* 1441: 4-13.

CHROMOSOMAL LOCATION

Genetic locus: SLC27A1 (human) mapping to 19p13.11.

PRODUCT

ACSVL5 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see ACSVL5 siRNA (h): sc-44585 and ACSVL5 shRNA Plasmid (h): sc-44585-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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

APPLICATIONS

ACSVL5 shRNA (h) Lentiviral Particles is recommended for the inhibition of ACSVL5 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

ACSVL5 (M-100): sc-25541 is recommended as a control antibody for monitoring of ACSVL5 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ACSVL5 gene expression knockdown using RT-PCR Primer: ACSVL5 (h)-PR: sc-44585-PR (20 μ l). Annealing temperature for the primers should be $55-60^{\circ}$ C and the extension temperature should be $68-72^{\circ}$ C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.