SANTA CRUZ BIOTECHNOLOGY, INC.

ACSM4 shRNA (h) Lentiviral Particles: sc-96250-V

BACKGROUND

ACSM4 (acyl-CoA synthetase medium-chain family member 4), also known as acyl-coenzyme A synthetase ACSM4, mitochondrial, is a 580 amino acid protein belonging to the ATP-dependent AMP-binding enzyme family. Encoded by a gene that maps to human chromosome 12p13.31, ACSM4 participates in ATP binding, metal ion binding, nucleotide binding and butyrate-CoA ligase and fatty-acyl-CoA synthase activities. ACSM4 exhibits mitochondrial subcellular localization and uses magnesium or manganese as a cofactor. Containing a medium-chain fatty acid, ACSM4 functions in CoA ligase activity with broad substrate specificity *(in vitro)*. ACSM4 also acts on acids from C_4 to C_{11}, as well as the corresponding 3-hydroxy- and 2,3- or 3,4-unsaturated acids *(in vitro)*. ACSM4 also displays significant association with AIDS progression.

REFERENCES

1. Iwai, N., et al. 2002. Association between SAH, an acyl-CoA synthetase gene, and hypertriglyceridemia, obesity, and hypertension. Circulation 105: 41-47.
2. Mashek, D.G., et al. 2004. Revised nomenclature for the mammalian long-chain acyl-CoA synthetase gene family. J. Lipid Res. 45: 1958-1961.
3. Watkins, P.A., et al. 2007. Evidence for 26 distinct acyl-coenzyme A synthetase genes in the human genome. J. Lipid Res. 48: 2736-2750.
4. Boomgaarden, I., et al. 2009. Comparative analyses of disease risk genes belonging to the acyl-CoA synthetase medium-chain (ACSM) family in human liver and cell lines. Biochem. Genet. 47: 739-748.
5. Zou, D.J., et al. 2009. How the olfactory bulb got its glomeruli: a just so story? Nat. Rev. Neurosci. 10: 611-618.
6. Hendrickson, S.L., et al. 2010. Genetic variants in nuclear-encoded mitochondrial genes influence AIDS progression. PLoS ONE 5: e12862.

CHROMOSOMAL LOCATION

Genetic locus: ACSM4 (human) mapping to 12p13.31.

PRODUCT

ACSM4 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 µl frozen stock containing 1.0 x 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 ACSM4 siRNA (h): sc-96250 and ACSM4 shRNA Plasmid (h): sc-96250-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 for detailed protocols and support products.

APPLICATIONS

ACSM4 shRNA (h) Lentiviral Particles is recommended for the inhibition of ACSM4 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ACSM4 gene expression knockdown using RT-PCR Primer: ACSM4 (h)-PR: sc-96250-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° 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.