SANTA CRUZ BIOTECHNOLOGY, INC.

ACSM4 siRNA (h): sc-96250

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.
7. SWISS-PROT/TrEMBL (P0C7M7). World Wide Web URL: http://www.uniprot.org/uniprot/P0C7M7

CHROMOSOMAL LOCATION

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

PRODUCT

ACSM4 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 ACSM4 shRNA Plasmid (h): sc-96250-SH and ACSM4 shRNA (h) Lentiviral Particles: sc-96250-V as alternate gene silencing products.

For independent verification of ACSM4 (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-96250A, sc-96250B and sc-96250C.

PROTOCOLS

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

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

ACSM4 siRNA (h) is recommended for the inhibition of ACSM4 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 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.

RESEARCH USE

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