

ACSS2 siRNA (h): sc-72440

BACKGROUND

ACSS2 (acyl-CoA synthetase short-chain family member 2), also known as ACAS2, ACS, ACSA or AceCS, is a 701 amino acid cytoplasmic protein that belongs to the ATP-dependent AMP-binding enzyme family. Existing as a monomer, ACSS2 functions to catalyze the ATP-dependent activation of acetate, a reaction that yields acetyl-CoA for use in energy generation and lipid synthesis. ACSS2 expression, which is highest in liver and kidney tissue, is regulated by the presence of unsaturated fatty acids and sterol regulatory element-binding proteins (SREBPs). Human ACSS2 exists as two alternatively spliced isoforms and shares 93% sequence identity with its mouse counterpart, suggesting a conserved role between species.

REFERENCES

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2. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605832. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Schwer, B., et al. 2006. Reversible lysine acetylation controls the activity of the mitochondrial enzyme acetyl-CoA synthetase 2. *Proc. Natl. Acad. Sci. USA* 103: 10224-10229.
4. Bionaz, M. and Loor, J.J. 2008. Gene networks driving bovine milk fat synthesis during the lactation cycle. *BMC Genomics* 9: 366.
5. Lu, Y., et al. 2008. Multiple genetic variants along candidate pathways influence plasma high-density lipoprotein cholesterol concentrations. *J. Lipid Res.* 49: 2582-2589.
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CHROMOSOMAL LOCATION

Genetic locus: ACSS2 (human) mapping to 20q11.22.

PRODUCT

ACSS2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ACSS2 shRNA Plasmid (h): sc-72440-SH and ACSS2 shRNA (h) Lentiviral Particles: sc-72440-V as alternate gene silencing products.

For independent verification of ACSS2 (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-72440A, sc-72440B and sc-72440C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ACSS2 siRNA (h) is recommended for the inhibition of ACSS2 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

ACSS2 (A-9): sc-398559 is recommended as a control antibody for monitoring of ACSS2 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 reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ACSS2 gene expression knockdown using RT-PCR Primer: ACSS2 (h)-PR: sc-72440-PR (20 μ l). 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.