SANTA CRUZ BIOTECHNOLOGY, INC.

# ACSL1 siRNA (m): sc-60616

## BACKGROUND

Acyl-CoA synthetases, also known as long-chain fatty-acid CoA synthases (FACL) or palmitoyl-CoA ligases, include ACSL1-6, which are all single-pass membrane proteins localizing to the mitochondrion, microsome or peroxisome. ACSL proteins are important for synthesis of cellular lipids and for β-oxidation degradation. Specifically, ACSL proteins catalyze the activation of long-chain fatty acids to acyl-CoAs, which can be metabolized to form $CO_2$, triacylglycerol (TAG), phospholipids (PL) and cholesteryl esters (CE). ACSL1 is highly expressed in liver and preferentially utilizes palmitoleate, oleate and linoleate.

## REFERENCES


1. Iijima, H., et al. 1996. Biochemical studies of two rat acyl-CoA synthetases, ACS1 and ACS2. Eur. J. Biochem. 242: 186-190.
2. Sevoz, C., et al. 2000. Thioesterification of 2-arylpropionic acids by recombinant acyl-coenzyme A synthetases (ACS1 and ACS2). Drug Metab. Dispos. 28: 398-402.
3. Muoio, D.M., et al. 2000. Acyl-CoAs are functionally channeled in liver: potential role of acyl-CoA synthetase. Am. J. Physiol. Endocrinol. Metab. 279: E1366-E1373.
4. Lewin, T.M., et al. 2001. Acyl-CoA synthetase isoforms 1, 4 and 5 are present in different subcellular membranes in rat liver and can be inhibited independently. J. Biol. Chem. 276: 24674-24679.
5. Coleman, R.A., et al. 2002. Do long-chain acyl-CoA synthetases regulate fatty acid entry into synthetic versus degradative pathways? J. Nutr. 132: 2123-2126.
6. Hall, A.M., et al. 2003. Characterization of the acyl-CoA synthetase activity of purified murine fatty acid transport protein 1. J. Biol. Chem. 278: 43008-43013.


## CHROMOSOMAL LOCATION

Genetic locus: Acsl1 (mouse) mapping to 8 B1.1.

## PRODUCT

ACSL1 siRNA (m) 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 ACSL1 shRNA Plasmid (m): sc-60616-SH and ACSL1 shRNA (m) Lentiviral Particles: sc-60616-V as alternate gene silencing products.

For independent verification of ACSL1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60616A, sc-60616B and sc-60616C.

## 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.

## 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

ACSL1 siRNA (m) is recommended for the inhibition of ACSL1 expression in mouse 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 ACSL1 gene expression knockdown using RT-PCR Primer: ACSL1 (m)-PR: sc-60616-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.