SANTA CRUZ BIOTECHNOLOGY, INC.

ACSL5 siRNA (h): sc-60621

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). ACSL5 utilizes a wide range of saturated fatty acids with a preference for C16-C18 unsaturated fatty acids. It is highly expressed in uterus and spleen. A decrease in expression of ACSL5 is correlated with tumorigenesis, including endometrioid adenocarcinomas and colorectal carcinomas. ACSL5 is also useful as a differentiating marker in the gastrointestinal tract.

REFERENCES

1. Oikawa, E., et al. 1998. A novel acyl-CoA synthetase, ACS5, expressed in intestinal epithelial cells and proliferating preadipocytes. J. Biochem. 124: 679-685.
2. 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.
3. 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.
4. Gassler, N., et al. 2003. Impaired expression of acyl-CoA-synthetase 5 in epithelial tumors of the small intestine. Hum. Pathol. 34: 1048-1052.
5. Gassler, N., et al. 2005. Expression of acyl-CoA synthetase 5 in human endometrium and in endometrioid adenocarcinomas. Histopathology 47: 501-507.
6. Gassler, N., et al. 2005. Characterization of metaplastic and heterotopic epithelia in the human gastrointestinal tract by the expression pattern of acyl-CoA synthetase 5. Histol. Histopathol. 20: 409-414.
7. Gassler, N., et al. 2005. Impaired expression of acyl-CoA synthetase 5 in sporadic colorectal adenocarcinomas. J. Pathol. 207: 295-300.

CHROMOSOMAL LOCATION

Genetic locus: ACSL5 (human) mapping to 10q25.2.

PRODUCT

ACSL5 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 ACSL5 shRNA Plasmid (h): sc-60621-SH and ACSL5 shRNA (h) Lentiviral Particles: sc-60621-V as alternate gene silencing products.

For independent verification of ACSL5 (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-60621A, sc-60621B and sc-60621C.

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

ACSL5 siRNA (h) is recommended for the inhibition of ACSL5 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.

GENE EXPRESSION MONITORING

ACSL5 (A-2): sc-365478 is recommended as a control antibody for monitoring of ACSL5 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 ACSL5 gene expression knockdown using RT-PCR Primer: ACSL5 (h)-PR: sc-60621-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.

PROTOCOLS

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