SANTA CRUZ BIOTECHNOLOGY, INC.

ACAD-10 siRNA (h): sc-95938

BACKGROUND

Mammalian tissues contain five types of thiolases, all of which participate in metabolism of various compounds throughout the body. ACAA2 (acetyl-coenzyme A acyltransferase 2), also known as DSAEC, is a 397 amino acid member of the thiolase family of enzymes and is involved in lipid metabolism. Localized to the mitochondrion, ACAA2 catalyzes the last step, namely the conversion of acetyl-CoA to 3-oxoacyl-CoA, in the fatty acid oxidation pathway. ACAA2 is highly expressed in liver, fibrofblasts and intercostal muscle and contains an N-terminal targeting signal that, unlike other mitochondrial proteins, is non-cleavable. Human ACAA2 shares 86.6% amino acid identity with its rat counterpart, suggesting a conserved function for ACAA2 among different species.

REFERENCES

1. Abe, H., et al. 1993. Cloning and sequence analysis of a full length cDNA encoding human mitochondrial 3-oxoacyl-CoA thiolase. Biochim. Biophys. Acta 1216: 304-306.
2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604770. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Doi, M., et al. 2003. Lipoprotein lipase activator NO-1886 (ibrolipim) accelerates the mRNA expression of fatty acid oxidation-related enzymes in rat liver. Metab. Clin. Exp. 52: 1547-1550.
4. Aboulaich, N., et al. 2004. Vectorial proteomics reveal targeting, phosphorylation and specific fragmentation of polymerase I and transcript release factor (PTRF) at the surface of caveolae in human adipocytes. Biochem. J. 383: 237-248.
5. de Boer, V.C., et al. 2006. Chronic quercetin exposure affects fatty acid catabolism in rat lung. Cell. Mol. Life Sci. 63: 2847-2858.

CHROMOSOMAL LOCATION

Genetic locus: ACAD10 (human) mapping to 12q24.12.

PRODUCT

ACAD-10 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 ACAD-10 shRNA Plasmid (h): sc-95938-SH and ACAD-10 shRNA (h) Lentiviral Particles: sc-95938-V as alternate gene silencing products.

For independent verification of ACAD-10 (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-95938A, sc-95938B and sc-95938C.

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

ACAD-10 siRNA (h) is recommended for the inhibition of ACAD-10 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

ACAD-10 (F-11): sc-393248 is recommended as a control antibody for monitoring of ACAD-10 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 ACAD-10 gene expression knockdown using RT-PCR Primer: ACAD-10 (h)-PR: sc-95938-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.