SANTA CRUZ BIOTECHNOLOGY, INC.

ACOT7 siRNA (h): sc-88501

BACKGROUND

Acyl-CoA thioesterases (ACOTs) are a group of enzymes that catalyze the hydrolysis of acyl-CoA to form coenzyme A (CoA) and a free fatty acid. Through their catalytic activity, ACOTs are able to regulate the level of fatty acids and acyl-CoAs within the cell. ACOT7 (acyl-CoA thioesterase 7), also known as BACH (brain acyl-CoA hydrolase), LACH or CTE-II, is a 380 amino acid protein that is expressed as six alternatively spliced isoforms which localize to either the cytoplasm or the mitochondria. Functioning as a homodimer that contains two acyl coenzyme A hydrolase domains, ACOT7 plays an important role in regulating acyl-CoA levels within the body and is thought to specifically participate in proper brain physiology and function. Decreased ACOT7 expression may be associated with mesial temporal lobe epilepsy, a form of focal epilepsy that is characterized by simple or complex seizures.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602587. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Yamada, J., et al. 1999. Purification, molecular cloning, and genomic organization of human brain long-chain acyl-CoA hydrolase. J. Biochem. 126: 1013-1019.
3. Yamada, J., et al. 2002. Human brain acyl-CoA hydrolase isoforms encoded by a single gene. Biochem. Biophys. Res. Commun. 299: 49-56.
4. Kuramochi, Y., et al. 2002. Characterization of mouse homolog of brain acyl-CoA hydrolase: molecular cloning and neuronal localization. Brain Res. Mol. Brain Res. 98: 81-92.
5. Yang, J.W., et al. 2004. Aberrant cytosolic acyl-CoA thioester hydrolase in hippocampus of patients with mesial temporal lobe epilepsy. Amino Acids 27: 269-275.
6. Yamada, J. 2005. Long-chain acyl-CoA hydrolase in the brain. Amino Acids 28: 273-278.

CHROMOSOMAL LOCATION

Genetic locus: ACOT7 (human) mapping to 1p36.31.

PRODUCT

ACOT7 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 ACOT7 shRNA Plasmid (h): sc-88501-SH and ACOT7 shRNA (h) Lentiviral Particles: sc-88501-V as alternate gene silencing products.

For independent verification of ACOT7 (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-88501A, sc-88501B and sc-88501C.

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

ACOT7 siRNA (h) is recommended for the inhibition of ACOT7 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

ACOT7 (C-2): sc-376808 is recommended as a control antibody for monitoring of ACOT7 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 ACOT7 gene expression knockdown using RT-PCR Primer: ACOT7 (h)-PR: sc-88501-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.