SANTA CRUZ BIOTECHNOLOGY, INC.

ACOT11 siRNA (m): sc-105034

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. ACOT11 (acyl-CoA thioesterase 11), also known as BFIT, KIAA0707 or THEA, is a 607 amino acid protein that localizes to the cytoplasm and contains one START domain and two acyl coenzyme A hydrolase domains. ACOT11 is expressed as two alternatively spliced isoforms, the first of which is present in liver, testis, spleen, brain, lung and stomach, and the second of which is present in kidney and uterus. ACOT11 functions as an acyl-CoA thioesterase that has catalytic activity towards medium (C12) and long-chain (C18) fatty acyl-CoA substrates.

REFERENCES

1. Adams, S.H., et al. 2001. BFIT, a unique acyl-CoA thioesterase induced in thermogenic brown adipose tissue: cloning, organization of the human gene and assessment of a potential link to obesity. Biochem. J. 360: 135-142.
2. Hunt, M.C. and Alexson, S.E. 2002. The role acyl-CoA thioesterases play in mediating intracellular lipid metabolism. Prog. Lipid Res. 41: 99-130.
3. Mashek, D.G., et al. 2004. Revised nomenclature for the mammalian long-chain acyl-CoA synthetase gene family. J. Lipid Res. 45: 1958-1961.
4. Yamada, J. 2005. Long-chain acyl-CoA hydrolase in the brain. Amino Acids 28: 273-278.
5. Hunt, M.C., et al. 2005. A revised nomenclature for mammalian acyl-CoA thioesterases/hydrolases. J. Lipid Res. 46: 2029-2032.
6. Hunt, M.C., et al. 2006. Analysis of the mouse and human acyl-CoA thioesterase (ACOT) gene clusters shows that convergent, functional evolution results in a reduced number of human peroxisomal ACOTs. FASEB J. 20: 1855-1864.
7. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 606803. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Acot11 (mouse) mapping to 4 C7.

PRODUCT

ACOT11 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 ACOT11 shRNA Plasmid (m): sc-105034-SH and ACOT11 shRNA (m) Lentiviral Particles: sc-105034-V as alternate gene silencing products.

For independent verification of ACOT11 (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-105034A, sc-105034B and sc-105034C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

ACOT11 siRNA (m) is recommended for the inhibition of ACOT11 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 ACOT11 gene expression knockdown using RT-PCR Primer: ACOT11 (m)-PR: sc-105034-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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