SANTA CRUZ BIOTECHNOLOGY, INC.

ACBP siRNA (h): sc-40310

BACKGROUND

Long chain acyl-CoA esters (LCAs) act as both substrates and intermediates in metabolism, and as regulators of various intracellular functions. Acyl-CoA binding protein (ACBP) specifically binds to LCA with high affinity and regulates its availability. ACBP is structurally and functionally conserved among a diverse group of organisms, including human, rat, frog, insect, plant and yeast. DBI, the gene encoding human ACBP, which maps to chromosome 2, is highly expressed in liver, soleus muscle and heart. The 10 kDa ACBP protein is also abundant in cells with a high level of lipogenesis and *de novo* fatty acid synthesis. Expression of ACBP is significantly induced during adipocyte differentiation. DBI is a target gene for proliferator-activated receptor (PPAR) γ, and is directly activated by PPARγ/RXRα and PPARα/RXRα, but not by PPARδ/RXRα. In addition to acyl-CoA binding and transport, ACBP is also implicated in γ-aminobutyric acid type A receptor binding, steroidogenesis and peptide hormone release.

REFERENCES

1. Knudsen, J. 1990. Acyl-CoA-binding protein (ACBP) and its relation to fatty acid-binding protein (FABP): an overview. Mol. Cell. Biochem. 98: 217-223.
2. Knudsen, J., et al. 1993. The function of acyl-CoA-binding protein (ACBP)/diazepam binding inhibitor (DBI). Mol. Cell. Biochem. 123: 129-138.
3. Gersuk, V.H., et al. 1995. Molecular cloning and chromosomal localization of a pseudogene related to the human acyl-CoA binding protein/diazepam binding inhibitor. Genomics 25: 469-476.
4. Swinnen, J.V., et al. 1998. Identification of diazepam-binding Inhibitor/Acyl-CoA-binding protein as a sterol regulatory element-binding protein-responsive gene. J. Biol. Chem. 273: 19938-19944.
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7. Franch, J., et al. 2002. Acyl-coenzyme A binding protein expression is fibre-type specific in rat skeletal muscle but not affected by moderate endurance training. Pflugers Arch. 443: 387-393.

CHROMOSOMAL LOCATION

Genetic locus: DBI (human) mapping to 2q14.2.

PRODUCT

ACBP siRNA (h) is a target-specific 19-25 nt siRNA 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 ACBP shRNA Plasmid (h): sc-40310-SH and ACBP shRNA (h) Lentiviral Particles: sc-40310-V as alternate gene silencing 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

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

ACBP (C-9): sc-376853 is recommended as a control antibody for monitoring of ACBP 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 ACBP gene expression knockdown using RT-PCR Primer: ACBP (h)-PR: sc-40310-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.