SANTA CRUZ BIOTECHNOLOGY, INC.

ACOX2 siRNA (m): sc-140818

BACKGROUND

ACOX2 (acyl-Coenzyme A oxidase 2), also known as BCOX, BRCOX, THCCox or BRCACOX, is a 681 amino acid protein that localizes to the peroxisome and belongs to the acyl-CoA oxidase family. Expressed in heart, kidney, liver, brain, lung, pancreas, placenta and skeletal muscle, ACOX2 functions as a branched-chain acyl-CoA oxidase that is involved in the degradation of bile acid intermediates and long branched fatty acids in peroxisomes. ACOX2 exists as a heterodimer and uses FAD as a cofactor to catalyze oxidation reactions. Defects in the gene encoding ACOX2 may be associated with Zellweger syndrome, an extremely rare congenital disorder that is characterized by the absence of peroxisomes and usually results in death before six months of age.

REFERENCES

1. Vanhove, G.F., et al. 1993. The CoA esters of 2-methyl-branched chain fatty acids and of the bile acid intermediates di- and trihydroxycoprostanic acids are oxidized by one single peroxisomal branched chain acyl-CoA oxidase in human liver and kidney. J. Biol. Chem. 268: 10335-10344.
2. Baumgart, E., et al. 1996. Mammalian peroxisomal acyl-CoA oxidases. III. Molecular characterization of human branched chain fatty acyl-CoA oxidase. Ann. N.Y. Acad. Sci. 804: 678-679.
3. Baumgart, E., et al. 1996. Molecular characterization of the human peroxisomal branched-chain acyl-CoA oxidase: cDNA cloning, chromosomal assignment, tissue distribution, and evidence for the absence of the protein in Zellweger syndrome. Proc. Natl. Acad. Sci. USA 93: 13748-13753.
4. Moghrabi, N.N., et al. 1997. Assignment of the human peroxisomal branched-chain acyl-CoA oxidase gene to chromosome 3p21.1-p14.2 by rodent/human somatic cell hybridization. Biochem. Biophys. Res. Commun. 231: 767-769.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601641. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Yeh, C.S., et al. 2006. Fatty acid metabolism pathway play an important role in carcinogenesis of human colorectal cancers by Microarray-Bioinformatics analysis. Cancer Lett. 233: 297-308.

CHROMOSOMAL LOCATION

Genetic locus: Acox2 (mouse) mapping to 14 A1.

PRODUCT

ACOX2 siRNA (m) is a pool of 2 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 ACOX2 shRNA Plasmid (m): sc-140818-SH and ACOX2 shRNA (m) Lentiviral Particles: sc-140818-V as alternate gene silencing products.

For independent verification of ACOX2 (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-140818A and sc-140818B.

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

ACOX2 siRNA (m) is recommended for the inhibition of ACOX2 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.

GENE EXPRESSION MONITORING

ACOX2 (A-7): sc-514320 is recommended as a control antibody for monitoring of ACOX2 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 ACOX2 gene expression knockdown using RT-PCR Primer: ACOX2 (m)-PR: sc-140818-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.