

ACOX3 siRNA (m): sc-140819

BACKGROUND

ACOX3 (acyl-Coenzyme A oxidase 3), also known as BRCOX or PRCOX, is a 700 amino acid protein that localizes to peroxisomes and belongs to the acyl-CoA oxidase family. Using FAD as a cofactor, ACOX3 catalyzes the desaturation of 2-methyl branched fatty acids in peroxisomes, thereby playing an important role in peroxisomal fatty acid β -oxidation. Human ACOX3 shares 75% sequence identity with its rat counterpart, suggesting a conserved role between species. Multiple isoforms of ACOX3 exist due to alternative splicing events. The gene encoding ACOX3 maps to human chromosome 4, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

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2. Vanhooren, J.C., et al. 1997. Evidence for the existence of a pristanoyl-CoA oxidase gene in man. *Biochem. J.* 325: 593-599.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 603402. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Hunt, M.C., et al. 2002. Characterization of an acyl-CoA thioesterase that functions as a major regulator of peroxisomal lipid metabolism. *J. Biol. Chem.* 277: 1128-1138.
5. Zha, S., et al. 2005. Peroxisomal branched chain fatty acid β -oxidation pathway is upregulated in prostate cancer. *Prostate* 63: 316-323.
6. Westin, M.A., et al. 2007. Peroxisomes contain a specific phytanoyl-CoA/pristanoyl-CoA thioesterase acting as a novel auxiliary enzyme in α - and β -oxidation of methyl-branched fatty acids in mouse. *J. Biol. Chem.* 282: 26707-26716.

CHROMOSOMAL LOCATION

Genetic locus: Acox3 (mouse) mapping to 5 B3.

PRODUCT

ACOX3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ACOX3 shRNA Plasmid (m): sc-140819-SH and ACOX3 shRNA (m) Lentiviral Particles: sc-140819-V as alternate gene silencing products.

For independent verification of ACOX3 (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-140819A, sc-140819B and sc-140819C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ACOX3 siRNA (m) is recommended for the inhibition of ACOX3 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 μ M in 66 μ l. 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

ACOX3 (G-9): sc-373977 is recommended as a control antibody for monitoring of ACOX3 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 ACOX3 gene expression knockdown using RT-PCR Primer: ACOX3 (m)-PR: sc-140819-PR (20 μ l). 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.