

# ACOX1 siRNA (m): sc-140817

## BACKGROUND

ACOX1 (acyl-coenzyme A oxidase 1), also known as SCOX or PALMCOX, is a 660 amino acid protein that localizes to the peroxisome and belongs to the acyl-CoA oxidase family. Existing as two alternatively spliced isoforms, ACOX1 uses FAD as a cofactor to catalyze the desaturation of very long chain acyl-CoA proteins to 2-*trans*-enoyl-CoA proteins, a reaction that utilizes oxygen and produces hydrogen peroxide. Defects in the gene encoding ACOX1 are the cause of pseudoneonatal adrenoleukodystrophy (pseudo-NALD), which is a single-enzyme disorder that is characterized by seizures, mental retardation, leukodystrophy, mild hepatomegaly and hearing deficits.

## REFERENCES

1. Pacot, C., et al. 1993. Biochemical properties of liver peroxisomes from rat, guinea pig and human species and the influence of hormonal status on rat liver acyl-CoA oxidase mRNA content. *Biochimie* 75: 235-242.
2. Aoyama, T., et al. 1994. Molecular cloning and functional expression of a human peroxisomal acyl-coenzyme A oxidase. *Biochem. Biophys. Res. Commun.* 198: 1113-1118.
3. Varanasi, U., et al. 1994. Isolation of the human peroxisomal acyl-CoA oxidase gene: organization, promoter analysis, and chromosomal localization. *Proc. Natl. Acad. Sci. USA* 91: 3107-3111.
4. Fan, C.Y., et al. 1996. Hepatocellular and hepatic peroxisomal alterations in mice with a disrupted peroxisomal fatty acyl-coenzyme A oxidase gene. *J. Biol. Chem.* 271: 24698-24710.
5. Fujiwara, C., et al. 2000. Catalase-less peroxisomes. Implication in the milder forms of peroxisome biogenesis disorder. *J. Biol. Chem.* 275: 37271-37277.
6. Suzuki, Y., et al. 2002. Peroxisomal acyl-CoA oxidase deficiency. *J. Pediatr.* 140: 128-130.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609751. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: Acox1 (mouse) mapping to 11 E2.

## PRODUCT

ACOX1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ACOX1 shRNA Plasmid (m): sc-140817-SH and ACOX1 shRNA (m) Lentiviral Particles: sc-140817-V as alternate gene silencing products.

For independent verification of ACOX1 (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-140817A, sc-140817B and sc-140817C.

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

## APPLICATIONS

ACOX1 siRNA (m) is recommended for the inhibition of ACOX1 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ACOX1 gene expression knockdown using RT-PCR Primer: ACOX1 (m)-PR: sc-140817-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.