

# ACOX1 siRNA (h): sc-94104

## 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. and Latruffe, N. 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.

## CHROMOSOMAL LOCATION

Genetic locus: ACOX1 (human) mapping to 17q25.1.

## PRODUCT

ACOX1 siRNA (h) 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 (h): sc-94104-SH and ACOX1 shRNA (h) Lentiviral Particles: sc-94104-V as alternate gene silencing products.

For independent verification of ACOX1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-94104A, sc-94104B and sc-94104C.

## 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 (h) is recommended for the inhibition of ACOX1 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  $\mu$ 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.

## GENE EXPRESSION MONITORING

ACOX1 (153CT43.1.1): sc-517306 is recommended as a control antibody for monitoring of ACOX1 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 ACOX1 gene expression knockdown using RT-PCR Primer: ACOX1 (h)-PR: sc-94104-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Sychev, Z.E., et al. 2017. Integrated systems biology analysis of KSHV latent infection reveals viral induction and reliance on peroxisome mediated lipid metabolism. *PLoS Pathog.* 13: e1006256.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.