

# Abcb7 siRNA (m): sc-140758

## BACKGROUND

The peroxisomal membrane contains several ATP-binding cassette (ABC) transporters, ABCD1-4 that are known to be present in the human peroxisome membrane. All four proteins are ABC half-transporters, which dimerize to form an active transporter. A mutation in the ABCD1 causes X-linked adrenoleukodystrophy (X-ALD), a peroxisomal disorder which affects lipid storage. ABCD2 in mouse, is expressed at high levels in the brain and adrenal organs, which are adversely affected in X-ALD. The peroxisomal membrane comprises two quantitatively major proteins, PMP22 and ABCD3. ABCD3 is associated with irregularly shaped vesicles which may be defective peroxisomes or peroxisome precursors. ABCD4 is a protein that localizes to peroxisomes. The genes which encode ABCD1-4 map to human chromosome Xq28, 12q12, 1p21.3 and 14q24.3, respectively. ABCB7 is a half-transporter involved in the transport of heme from the mitochondria to the cytosol and maps to human chromosome Xq13.3.

## REFERENCES

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- Lombard-Platet, G., et al. 1996. A close relative of the adrenoleukodystrophy (ALD) gene codes for a peroxisomal protein with a specific expression pattern. Proc. Natl. Acad. Sci. USA 93: 1265-1269.
- Shani, N., et al. 1997. Identification of a fourth half ABC transporter in the human peroxisomal membrane. Hum. Mol. Genet. 6: 1925-1931.
- Moser, H.W. 1997. Adrenoleukodystrophy: phenotype, genetics, pathogenesis and therapy. Brain 120: 1485-1508.
- Savary, S., et al. 1997. Chromosomal localization of the adrenoleukodystrophy-related gene in man and mice. Eur. J. Hum. Genet. 5: 99-101.
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## CHROMOSOMAL LOCATION

Genetic locus: Abcb7 (mouse) mapping to X D.

## PRODUCT

Abcb7 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Abcb7 shRNA Plasmid (m): sc-140758-SH and Abcb7 shRNA (m) Lentiviral Particles: sc-140758-V as alternate gene silencing products.

## PROTOCOLS

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

Abcb7 siRNA (m) is recommended for the inhibition of ABCB7 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 ABCB7 gene expression knockdown using RT-PCR Primer: Abcb7 (m)-PR: sc-140758-PR (20  $\mu$ 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.