SANTA CRUZ BIOTECHNOLOGY, INC.

ABCA3 siRNA (m): sc-60114

BACKGROUND

The ATP binding cassette (ABC) transporters, or traffic ATPases, constitute an expansive family of proteins accountable for the transport of a wide variety of substrates across cell membranes in both prokaryotic and eukaryotic cells and are involved in the regulation of lipid transport and membrane trafficking. ABCA3 (ATP-binding cassette 3), also designated ATP-binding cassette transporter 3 and ABC transporter 3, has typical structural features of the ABC transporter family and consists of a 1,704 amino acid polypeptide with two homologous repeats, each consisting of six putative transmembrane helices and an ATP-binding cassette motif. ABCA3, the gene encoding the human ABCA3 protein, maps near the polycystic kidney disease type 1 (PKD1) gene on chromosome 16p13.3. The ABCA3 gene is expressed at highest levels in lung. Biochemical and molecular research indicates that ABCA3 is targeted to vesicle membranes and located in the limiting membrane of lamellar bodies and may play a key role in lipid organization during the formation of lamellar bodies.

REFERENCES

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4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601615. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Nagata, K., et al. 2004. Human ABCA3, a product of a responsible gene for ABCA3 for fatal surfactant deficiency in newborns, exhibits unique ATP hydrolysis activity and generates intracellular multilamellar vesicles. Biochem. Biophys. Res. Commun. 324: 262-268.
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7. van der Deen, M., et al. 2005. ATP-binding cassette (ABC) transporters in normal and pathological lung. Respir. Res. 6: 59.
8. Bullard, J.E., et al. 2005. ABCA3 mutations associated with pediatric interstitial lung disease. Am. J. Respir. Crit. Care Med. 172: 1026-1031.

CHROMOSOMAL LOCATION

Genetic locus: Abca3 (mouse) mapping to 17 A3.3.

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.

PRODUCT

ABCA3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ABCA3 shRNA Plasmid (m): sc-60114-SH and ABCA3 shRNA (m) Lentiviral Particles: sc-60114-V as alternate gene silencing products.

For independent verification of ABCA3 (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-60114A, sc-60114B and sc-60114C.

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

ABCA3 siRNA (m) is recommended for the inhibition of ABCA3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ABCA3 gene expression knockdown using RT-PCR Primer: ABCA3 (m)-PR: sc-60114-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.