SANTA CRUZ BIOTECHNOLOGY, INC.

ABCB6 siRNA (m): sc-140757

BACKGROUND

The ATP-binding cassette (ABC) superfamily is comprised of transmembrane proteins involved in energy-dependent transport of a variety of substrates across membranes. ABCB6 is a 842 amino acid protein belonging to the heavy metal importer subfamily of the ABC transporter family. Upregulated at the protein level by cellular porphyrins, ABCB6 binds to heme and a porphyrin and assists in their ATP-dependent uptake into the mitochondria. ABCB6 also plays an important role in heme synthesis. ABCB6 contains one ABC transmembrane type-1 domain and one ABC transporter domain and forms a homodimer in the mitochondrion outer membbrane, plasma membrane and the Golgi apparatus. Widely expressed, ABCB6 has highest expression in skeletal muscle and heart. ABCB6 is present as two isoforms produced by alternative splicing events.

REFERENCES

1. Allikmets, R., et al. 1996. Characterization of the human ABC superfamily: isolation and mapping of 21 new genes using the expressed sequence tags database. Hum. Mol. Genet. 5: 1649-1655.
2. Furuya, K.N., et al. 1997. Identification of a new P-glycoprotein-like ATP-binding cassette transporter gene that is overexpressed during hepatocarcinogenesis. Cancer Res. 57: 3708-3716.
3. Mitsuhashi, N., et al. 2000. MTABC3, a novel mitochondrial ATP-binding cassette protein involved in iron homeostasis. J. Biol. Chem. 275: 17536-17540.
4. Emadi-Konjin, H.P., et al. 2002. Isolation of a genomic clone containing the promoter region of the human ATP binding cassette (ABC) transporter, ABCB6. Biochim. Biophys. Acta 1574: 117-130.
5. Kurashima-Ito, K., et al. 2006. Heteronuclear multidimensional NMR and homology modelling studies of the C-terminal nucleotide-binding domain of the human mitochondrial ABC transporter ABCB6. J. Biomol. NMR 35: 53-71.

CHROMOSOMAL LOCATION

Genetic locus: Abcb6 (mouse) mapping to 1 C3.

PRODUCT

ABCB6 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 ABCB6 shRNA Plasmid (m): sc-140757-SH and ABCB6 shRNA (m) Lentiviral Particles: sc-140757-V as alternate gene silencing products.

For independent verification of ABCB6 (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-140757A, sc-140757B and sc-140757C.

PROTOCOLS

See our web site at 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 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

ABCB6 siRNA (m) is recommended for the inhibition of ABCB6 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.

GENE EXPRESSION MONITORING

ABCB6 (G-10): sc-365930 is recommended as a control antibody for monitoring of ABCB6 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 ABCB6 gene expression knockdown using RT-PCR Primer: ABCB6 (m)-PR: sc-140757-PR (20 µl). 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.