SANTA CRUZ BIOTECHNOLOGY, INC.

cytochrome b5 siRNA (m): sc-37378

BACKGROUND

Cytochrome b5 is a membrane-bound member of the cytochrome b family. A heme protein that functions as an electron carrier for many membrane-bound oxygenases, cytochrome b5 possesses two heme groups, which are not covalently attached to the protein. Two isoforms of cytochrome b5, a microsomal membrane-bound form and a cytoplasmic form, are produced by alternative splicing. Mutations in cytochrome b5 are associated with Leber's hereditary optic neuropathy and with myopathy.

REFERENCES

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2. Yoo, M. and Steggles, A.W. 1988. The complete nucleotide sequence of human liver cytochrome b5 mRNA. Biochem. Biophys. Res. Commun. 156: 576-580.
3. Giordano, S.J. and Steggles, A.W. 1991. The human liver and reticulocyte cytochrome b5 mRNAs are products from a single gene. Biochem. Biophys. Res. Commun. 178: 38-44.
4. Hom, K., et al. 2000. NMR studies of the association of cytochrome b5 with cytochrome c. Biochemistry 39: 14025-14039.
5. Wang, Y.H., et al. 2001. The regulation of surface charged residues on the properties of cytochrome b5. J. Protein Chem. 20: 487-493.
6. Mapes, S., et al. 2002. Adrenocortical cytochrome b5 expression during fetal development of the rhesus macaque. Endocrinology 143: 1451-1458.
7. Reed, J.R. and Hollenberg, P.F. 2003. Examining the mechanism of stimulation of cytochrome P450 by cytochrome b5: the effect of cytochrome b5 on the interaction between cytochrome P450 2B4 and P450 reductase. J. Inorg. Biochem. 97: 265-275.
8. Zhang, Q., et al. 2004. The comparative study on the solution structures of the oxidized bovine microsomal cytochrome b5 and mutant V45H. Protein Sci. 13: 2161-2169.

CHROMOSOMAL LOCATION

Genetic locus: Cyb5 (mouse) mapping to 18 E4.

PRODUCT

cytochrome b5 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 cytochrome b5 shRNA Plasmid (m): sc-37378-SH and cytochrome b5 shRNA (m) Lentiviral Particles: sc-37378-V as alternate gene silencing products.

For independent verification of cytochrome b5 (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-37378A, sc-37378B and sc-37378C.

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

cytochrome b5 siRNA (m) is recommended for the inhibition of cytochrome b5 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 cytochrome b5 gene expression knockdown using RT-PCR Primer: cytochrome b5 (m)-PR: sc-37378-PR (20 µl, 392 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ilangovan, G., et al. 2021. Defining the reducing system of the NO dioxygenase cytoglobin in vascular smooth muscle cells and its critical role in regulating cellular NO decay. J. Biol. Chem. 296: 100196.

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.