SANTA CRUZ BIOTECHNOLOGY, INC.

CYB5D1 siRNA (h): sc-94068

BACKGROUND

Cytochrome b5 is a membrane-bound heme protein that possesses two heme groups and functions as an electron carrier for many membrane-bound oxygenases. Two isoforms of cytochrome b5, a microsomal membrane-bound form and a cytoplasmic form, are produced by alternative splicing. Mutations in the gene encoding cytochrome b5 are associated with Leber's hereditary optic neuropathy and myopathy. CYB5D1 (cytochrome b5 domain containing 1) is a 228 amino acid protein that exists as two alternatively spliced variants and contains one cytochrome b5 heme-binding domain, suggesting a similar function to cytochrome b5. The gene encoding CYB5D1 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

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3. Giordano, S.J., et al. 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., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: CYB5D1 (human) mapping to 17p13.1.

PRODUCT

CYB5D1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CYB5D1 shRNA Plasmid (h): sc-94068-SH and CYB5D1 shRNA (h) Lentiviral Particles: sc-94068-V as alternate gene silencing products.

For independent verification of CYB5D1 (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-94068A, sc-94068B and sc-94068C.

RESEARCH USE

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

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

CYB5D1 siRNA (h) is recommended for the inhibition of CYB5D1 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 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 CYB5D1 gene expression knockdown using RT-PCR Primer: CYB5D1 (h)-PR: sc-94068-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.