SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4B1 siRNA (m): sc-142728

BACKGROUND

Cytochrome P450 proteins are heme-thiolate monooxygenases that mediate NADPH-dependent electron transport and function to oxidize a variety of structurally unrelated compounds, including steroids, fatty acids and xenobiotics. Specifically, Cytochrome P450s are responsible for metabolizing arachidonic acid to hydroxyeicosatetraenoic acid (a regulator of blood pressure) and epoxyeicosatrienoic acid (a molecule involved in signaling events). CYP4B1 (cytochrome P450, family 4, subfamily B, polypeptide 1), also known as CYP-IVB1 or P-450HP, is a 511 amino acid peripheral membrane protein of the endoplasmic reticulum and microsome that belongs to the cytochrome P450 family. Expressed in lung and liver, CYP4B1 is involved in NADPH-dependent electron transport pathway and oxidizes xenobiotics, fatty acids and steroids. CYP4B1 is encoded by a gene that maps to human chromosome 1p33 and exists as two alternatively spliced isoforms.

REFERENCES

1. Nhamburo, P.T., et al. 1989. Identification of a new P450 expressed in human lung: complete cDNA sequence, cDNA-directed expression, and chromosome mapping. Biochemistry 28: 8060-8066.
2. Yokotani, N., et al. 1990. cDNA cloning of cytochrome P-450 related to P-450p-2 from the cDNA library of human placenta. Gene structure and expression. Eur. J. Biochem. 187: 23-29.
3. Ito, O., et al. 2001. Effects of converting enzyme inhibitors on renal P-450 metabolism of arachidonic acid. Am. J. Physiol. Regul. Integr. Comp. Physiol. 280: R822-R830.
4. Lo-Guidice, J.M., et al. 2002. Genetic polymorphism of the human cytochrome P450 CYP4B1: evidence for a non-functional allelic variant. Pharmacogenetics 12: 367-374.
5. Carr, B.A., et al. 2003. Characterization of pulmonary CYP4B2, specific catalyst of methyl oxidation of 3-methylindole. Mol. Pharmacol. 63: 1137-1147.

CHROMOSOMAL LOCATION

Genetic locus: Cyp4b1 (mouse) mapping to 4 D1.

PRODUCT

CYP4B1 siRNA (m) is a pool of 2 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 CYP4B1 shRNA Plasmid (m): sc-142728-SH and CYP4B1 shRNA (m) Lentiviral Particles: sc-142728-V as alternate gene silencing products.

For independent verification of CYP4B1 (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-142728A and sc-142728B.

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

CYP4B1 siRNA (m) is recommended for the inhibition of CYP4B1 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 CYP4B1 gene expression knockdown using RT-PCR Primer: CYP4B1 (m)-PR: sc-142728-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.