SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2B10 siRNA (m): sc-142671

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cytochrome P450 (CYP2) superfamily is one of three enzyme systems which metabolize the fatty acid arachadonic acid (AA) to vascular tone regulators. CYP2 are monooxygenase enzymes that require several cofactors such as nicotinamide adenine dinucleotide phosphate (NADPH) and P450 reductase. Epoxygenases are members of the CYP2 family that metabolize AA to epoxy-eicosatrienoic acid, and ω-hydroxylases are members of the CYP2 family that produce 19- and 20-hydroxyeicosatetraenoic acids. The CYP2 family members are part of the microsomal drug metabolising system responsible for oxidation of many therapeutic agents as well as steroids, fatty acids and many other endogenous substances. CYP2B1 and CYP2B2 are members of the CYP2 family that comprise the major phenobarbital-inducible hepatic cytochromes P450s. CYP2B1 converts ifosfamide to its active cytotoxic compounds, while CYP2B2 mediates phenobarbital inducibility.

REFERENCES

1. Liu, S., et al. 2001. Functional analysis of the phenobarbital-responsive unit in rat CYP2B2. Biochem. Pharmacol. 62: 21-28.
2. Paquet, Y., et al. 2001. Mutational analysis of the CYP2B2 phenobarbital response unit and inhibitory effect of the constitutive androstane receptor on phenobarbital responsiveness. J. Biol. Chem. 275: 38427-38436.
3. Beaudet, M.J., et al. 2005. The CYP2B2 phenobarbital response unit contains binding sites for hepatocyte nuclear factor 4, PBX-PREP1, the thyroid hormone receptor beta and the liver X receptor. Biochem. J. 388: 407-418.
4. Samel, S., et al. 2005. Peritoneal cancer treatment with CYP2B1 transfected, microencapsulated cells and ifosfamide. Cancer Gene Ther. 13: 65-73.
5. Chang, T.K., et al. 2006. Distinct role of bilobalide and ginkgolide A in the modulation of rat CYP2B1 and CYP3A23 gene expression by Ginkgo biloba extract in cultured hepatocytes. Drug Metab. Dispos. 34: 234-242.
6. Hirasawa, F., et al. 2006. Styrene monomer primarily induces CYP2B1 mRNA in rat liver. Xenobiotica 35: 1089-1099.
7. Qin, G. and Meng, Z. 2006. Effect of sulfur dioxide inhalation on CYP2B1/2 and CYP2E1 in rat liver and lung. Inhal. Toxicol. 18: 581-588.

CHROMOSOMAL LOCATION

Genetic locus: Cyp2b10 (mouse) mapping to 7 A3.

PRODUCT

CYP2B10 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 CYP2B10 shRNA Plasmid (m): sc-142671-SH and CYP2B10 shRNA (m) Lentiviral Particles: sc-142671-V as alternate gene silencing products.

For independent verification of CYP2B10 (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-142671A, sc-142671B and sc-142671C.

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

CYP2B10 siRNA (m) is recommended for the inhibition of CYP2B10 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

CYP2B10 (9.14): sc-73546 is recommended as a control antibody for monitoring of CYP2B10 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 CYP2B10 gene expression knockdown using RT-PCR Primer: CYP2B10 (m)-PR: sc-142671-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.

PROTOCOLS

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