SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2B9 siRNA (m): sc-142675

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. CYP2B9 is a member of the CYP2 family that comprise the major phenobarbital-inducible hepatic cytochromes P450s. In liver microsomes, CYP2B9 may be involved in an NADPH-dependent electron transport pathway. It has been show to oxidize a variety of structurally unrelated compounds, such as steroids, fatty acids, and xenobiotics.

REFERENCES

1. Liu, S., Rivera-Rivera, I., Bredemeyer, A.J. and Kemper, B. 2001. Functional analysis of the phenobarbital-responsive unit in rat CYP2B2. Biochem. Pharmacol. 62: 21-28.
2. Paquet, Y., Trottier, E., Beaudet, M.J. and Anderson, A. 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., Desrochers, M., Lachaud, A.A. and Anderson, A. 2005. The CYP2B2 phenobarbital response unit contains binding sites for hepatocyte nuclear factor 4, PBX-PREP1, the thyroid hormone receptor β and the liver X receptor. Biochem. J. 388: 407-418.
4. Samel, S., Keese, M., Lux, A., Jesnowski, R., Prosst, R., Saller, R., Hafner, M., Sturm, J., Post, S. and Löhr, M. 2005. Peritoneal cancer treatment with CYP2B1 transfected, microencapsulated cells and ifosfamide. Cancer Gene Ther. 13: 65-73.
5. Chang, T.K., Chen, J. and Teng, X.W. 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., Kawagoe, M., Arany, S., Koizumi, Y., Ueno, Y. and Sugiyama, T. 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.
8. Walubo, A., Barr, S. and Abraham, A.M. 2006. RAT CYP3A and CYP2B1/2 were not associated with nevirapine-induced hepatotoxicity. Methods Find. Exp. Clin. Pharmacol. 28: 423-331.
9. Zhang, Q., Bae, Y., Kemper, J.K. and Kemper, B. 2006. Analysis of multiple nuclear receptor binding sites for CAR/RXR in the phenobarbital responsive unit of CYP2B2. Arch. Biochem. Biophys. 451: 119-127.

CHROMOSOMAL LOCATION

Genetic locus: Cyp2b9 (mouse) mapping to 7 A3.

PRODUCT

CYP2B9 siRNA (m) is a target-specific 19-25 nt siRNA 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 CYP2B9 shRNA Plasmid (m): sc-142675-SH and CYP2B9 shRNA (m) Lentiviral Particles: sc-142675-V as alternate gene silencing 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

CYP2B9 siRNA (m) is recommended for the inhibition of CYP2B9 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 CYP2B9 gene expression knockdown using RT-PCR Primer: CYP2B9 (m)-PR: sc-142675-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.