SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4A14 siRNA (m): sc-142723

BACKGROUND

Cytochrome p450 proteins are heme-thiolate monooxygenases that mediate NADPH-dependent electron transport and oxidize a variety of structurally unrelated compounds, including steroids, fatty acids, and xenobiotics. Cytochrome P450s metabolize arachidonic acid to hydroxyeicosatetraenoic acids and epoxyeicosatrienoic acids. In the kidney of female mice, CYP4A isoforms CYP4A10 and CYP4A14 are present in proximal tubules. Mouse CYP4A14 has a GC rich sequence immediately 5' of the transcription start site, and is similar to the rat CYP4A2 and CYP4A3 genes. The mouse CYP4A14 gene spans approximately 13 kb, and contains 12 exons; sequence similarity to the rat CYP4A2 gene sequence falls off 300 bp upstream from the start site.

REFERENCES

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2. Westlind, A., et al. 2001. Cloning and tissue distribution of a novel human cytochrome p450 of the CYP3A subfamily, CYP3A43. Biochem. Biophys. Res. Commun. 281: 1349-1355.
3. Davis, B.K., et al. 2002. Hyperconservation of the putative antigen recognition site of the MHC class I-b molecule TL in the subfamily Murinae: evidence that thymus leukemia antigen is an ancient mammalian gene. J. Immunol. 169: 6890-6899.
4. Hercule, H.C., et al. 2003. Contribution of cytochrome P450 4A isoforms to renal functional response to inhibition of nitric oxide production in the rat. J. Physiol. 551: 971-979.
5. Choudhary, D., et al. 2003. Comparative expression profiling of 40 mouse cytochrome P450 genes in embryonic and adult tissues. Arch. Biochem. Biophys. 414: 91-100.
6. Stec, D.E., et al. 2003. Distribution of cytochrome P-450 4A and 4F isoforms along the nephron in mice. Am. J. Physiol. Renal Physiol. 284: F95-F102.
7. Wang, J., et al. 2004. Expression of cytochrome P450-4A isoforms in the rat cremaster muscle microcirculation. Microcirculation 11: 89-96.

CHROMOSOMAL LOCATION

Genetic locus: Cyp4a14 (mouse) mapping to 4 D1.

PRODUCT

CYP4A14 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 CYP4A14 shRNA Plasmid (m): sc-142723-SH and CYP4A14 shRNA (m) Lentiviral Particles: sc-142723-V as alternate gene silencing products.

For independent verification of CYP4A14 (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-142723A and sc-142723B.

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

CYP4A14 siRNA (m) is recommended for the inhibition of CYP4A14 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 CYP4A14 gene expression knockdown using RT-PCR Primer: CYP4A14 (m)-PR: sc-142723-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.