SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2A4 siRNA (m): sc-142669

BACKGROUND

The cytochrome P450 proteins (CYPs) are monooxygenases that catalyze reactions involved in both drug metabolism and in the synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies, such as CYP1A and CYP2A, based on their sequence similarities. CYP2A4 (cytochrome P450, family 2, subfamily a, polypeptide 4), also known as Cyp15a1 (cytochrome P450-15-α) or testosterone 15-α-hydroxylase, is a 494 amino acid peripheral membrane protein of the endoplasmic reticulum and microsome. Expressed in kidney and lung, CYP2A4 has also been observed to be expressed with a strong circadian rhythmicity in liver, which is regulated by DBP. CYP2A4 plays a role in the 15-α-hydroxylation of testosterone, progesterone and androstenedione, and is encoded by a gene that maps to mouse chromosome 7 A3.

REFERENCES

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2. Lindberg, R., et al. 1989. The structure and characterization of type I P-450(15) α gene as major steroid 15 α-hydroxylase and its comparison with type II P-450(15) α gene. J. Biol. Chem. 264: 6465-6471.
3. Lindberg, R.L., et al. 1989. Alteration of mouse cytochrome P450coh substrate specificity by mutation of a single amino-acid residue. Nature 339: 632-634.
4. Aida, K., et al. 1994. Lack of the steroid 15 α-hydroxylase gene (Cyp2a-4) in wild mouse strain *Mus spretus*: rapid evolution of the P450 gene superfamily. Genomics 19: 564-566.
5. Yokomori, N., et al. 1997. Transcriptional regulation by HNF-4 of the steroid 15α-hydroxylase P450 (Cyp2a-4) gene in mouse liver. J. Steroid Biochem. Mol. Biol. 62: 307-314.
6. Lavery, D.J., et al. 1999. Circadian expression of the steroid 15 α-hydroxylase (Cyp2a4) and coumarin 7-hydroxylase (Cyp2a5) genes in mouse liver is regulated by the PAR leucine zipper transcription factor DBP. Mol. Cell. Biol. 19: 6488-6499.
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CHROMOSOMAL LOCATION

Genetic locus: Cyp2a4 (mouse) mapping to 7 A3.

PRODUCT

CYP2A4 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 CYP2A4 shRNA Plasmid (m): sc-142669-SH and CYP2A4 shRNA (m) Lentiviral Particles: sc-142669-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

CYP2A4 siRNA (m) is recommended for the inhibition of CYP2A4 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 CYP2A4 gene expression knockdown using RT-PCR Primer: CYP2A4 (m)-PR: sc-142669-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.