SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2D22 siRNA (m): sc-142694

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 based on sequence similarities. CYP2D22 (cytochrome P450, family 2, subfamily δ, polypeptide 22) is a 500 amino acid protein belonging to the cytochrome P450 family. Abundantly expressed in liver and moderately expressed in adrenal, ovary and mammary gland, CYP2D22 is the mouse ortholog of human CYP2D6. Enzymatic function of CYP2D22 is suggested to be dissimilar to CYP2D6 due to their unique active sites but is thought to have a certain degree of functional similarity to human CYP3A4. Members of the CYP3A family are responsible for the metabolism of more than 50% of all clinical drugs. CYP2D22 is encoded by a gene located on mouse chromosome 15 E1.

REFERENCES

1. Blume, N., et al. 2000. Characterization of Cyp2d22, a novel cytochrome P450 expressed in mouse mammary cells. Arch. Biochem. Biophys. 381: 191-204.
2. Wienkers, L.C. 2001. Problems associated with *in vitro* assessment of drug inhibition of CYP3A4 and other P-450 enzymes and its impact on drug discovery. J. Pharmacol. Toxicol. Methods 45: 79-84.
3. Yu, A.M., et al. 2006. Expression, purification, and characterization of mouse CYP2d22. Drug Metab. Dispos. 34: 1167-1174.
4. Singh, S., et al. 2009. The expression of CYP2D22, an ortholog of human CYP2D6, in mouse striatum and its modulation in 1-methyl 4-phenyl-1,2,3,6-tetrahydropyridine-induced Parkinson's disease phenotype and nicotine-mediated neuroprotection. Rejuvenation Res. 12: 185-197.
5. Adachi, T., et al. 2011. Modulation of cytochrome P450 gene expression in primary hepatocytes on various artificial extracellular matrices. Biochem. Biophys. Res. Commun. 413: 577-581.
6. Koh, K.H., et al. 2011. Altered cytochrome P450 expression in mice during pregnancy. Drug Metab. Dispos. 39: 165-169.
7. Singhal, N.K., et al. 2011. Melatonin or silymarin reduces maneb- and paraquat-induced Parkinson's disease phenotype in the mouse. J. Pineal Res. 50: 97-109.

CHROMOSOMAL LOCATION

Genetic locus: Cyp2d22 (mouse) mapping to 15 E1.

PRODUCT

CYP2D22 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 CYP2D22 shRNA Plasmid (m): sc-142694-SH and CYP2D22 shRNA (m) Lentiviral Particles: sc-142694-V as alternate gene silencing products.

For independent verification of CYP2D22 (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-142694A, sc-142694B and sc-142694C.

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

CYP2D22 siRNA (m) is recommended for the inhibition of CYP2D22 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 CYP2D22 gene expression knockdown using RT-PCR Primer: CYP2D22 (m)-PR: sc-142694-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.