SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4F8 siRNA (h): sc-105261

BACKGROUND

The cytochrome P450 proteins are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies based on their sequence similarities. CYP4F8 (cytochrome P450 4F8), also known as CPF8 or CYPIVF8, is a 520 amino acid member of the cytochrome P450 protein family. Localized to endoplasmic reticulum membrane and microsome membranes, CYP4F8 hydroxylates arachidonic acid to (18R)-hydroxyarachidonate. CYP4F8 also catalyzes the hydroxylation of PGI2 and carbaprostacyclin, as well as the epoxidation of 4,7,10,13,16,19-(Z)-docosahexaenoic acid and 7,10,13,16,19-(Z)-docosapentaenoic acid. CYP4F8 is encoded by a gene that is part of a cluster of cytochrome P450 genes on human chromosome 19.

REFERENCES

1. Simpson, A.E. 1997. The cytochrome P450 4 (CYP4) family. Gen. Pharmacol. 28: 351-359.
2. Bylund, J., et al. 1999. Gene expression of a novel cytochrome P450 of the CYP4F subfamily in human seminal vesicles. Biochem. Biophys. Res. Commun. 261: 169-174.
3. Bylund, J., et al. 2000. Identification of CYP4F8 in human seminal vesicles as a prominent 19-hydroxylase of prostaglandin endoperoxides. J. Biol. Chem. 275: 21844-21849.
4. Oliw, E.H., et al. 2001. Oxidation of prostaglandin H_2 and prostaglandin H_2 analogues by human cytochromes P450: analysis of ω-side chain hydroxy metabolites and four steroisomers of 5-hydroxyprostaglandin I_1 by mass spectrometry. Biochem. Pharmacol. 62: 407-415.
5. Stark, K., et al. 2003. Expression of CYP4F8 (prostaglandin H 19-hydroxylase) in human epithelia and prominent induction in epidermis of psoriatic lesions. Arch. Biochem. Biophys. 409: 188-196.
6. Nelson, D.R., et al. 2004. Comparison of cytochrome P450 (CYP) genes from the mouse and human genomes, including nomenclature recommendations for genes, pseudogenes and alternative-splice variants. Pharmacogenetics 14: 1-18.

CHROMOSOMAL LOCATION

Genetic locus: CYP4F8 (human) mapping to 19p13.12.

PRODUCT

CYP4F8 siRNA (h) 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 CYP4F8 shRNA Plasmid (h): sc-105261-SH and CYP4F8 shRNA (h) Lentiviral Particles: sc-105261-V as alternate gene silencing products.

For independent verification of CYP4F8 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105261A, sc-105261B and sc-105261C.

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

CYP4F8 siRNA (h) is recommended for the inhibition of CYP4F8 expression in human 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 CYP4F8 gene expression knockdown using RT-PCR Primer: CYP4F8 (h)-PR: sc-105261-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.