SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4F12 siRNA (h): sc-105259

BACKGROUND

Cytochrome P450 proteins are heme-thiolate monooxygenases that mediate NADPH-dependent electron transport and function to oxidize a variety of structurally unrelated compounds, including steroids, fatty acids and xenobiotics. Specifically, cytochrome P450s are responsible for metabolizing arachidonic acid to hydroxyeicosatetraenoic acid (a regulator of blood pressure) and epoxyeicosatrienoic acid (a molecule involved in signaling events). CYP4F12 (cytochrome P450, family 4, subfamily F, polypeptide 12) is a 524 amino acid multi-pass membrane protein that localizes to both the microsome and the endoplasmic reticulum and is expressed in heart, liver, colon and small intestine. Using heme as a cofactor, CYP4F12 functions to catalyze leukotriene B4 ω-hydroxylation and arachidonic acid ω-hydroxylation, as well as the hydroxylation of ebastine, an antihistamine.

REFERENCES

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4. Cauffiez, C., et al. 2004. Human CYP4F12 genetic polymorphism: identification and functional characterization of seven variant allozymes. Biochem. Pharmacol. 68: 2417-2425.
5. 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.
6. Stark, K., et al. 2005. Oxygenation of polyunsaturated long chain fatty acids by recombinant CYP4F8 and CYP4F12 and catalytic importance of Tyr-125 and Gly-328 of CYP4F8. Arch. Biochem. Biophys. 441: 174-181.
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CHROMOSOMAL LOCATION

Genetic locus: CYP4F12 (human) mapping to 19p13.12.

PRODUCT

CYP4F12 siRNA (h) 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 CYP4F12 shRNA Plasmid (h): sc-105259-SH and CYP4F12 shRNA (h) Lentiviral Particles: sc-105259-V as alternate gene silencing products.

For independent verification of CYP4F12 (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-105259A and sc-105259B.

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

CYP4F12 siRNA (h) is recommended for the inhibition of CYP4F12 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 CYP4F12 gene expression knockdown using RT-PCR Primer: CYP4F12 (h)-PR: sc-105259-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.