SANTA CRUZ BIOTECHNOLOGY, INC.

Cyp4f13 siRNA (m): sc-142729

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). Cyp4f13, (cytochrome P450, family 4, subfamily F, polypeptide 13), also known as Cypf13 or 0610030I10Rik, is a 523 amino acid murine protein that is encoded by a gene located on mouse chromosome 17 B1. The human homolog to Cyp4f13 is CYP4F3 (cytochrome P450 family 4 subfamily F member 3), also known as CPF3, CYP4F, LTB4H. CYP4F3 is a 520 amino acid member of the cytochrome P450 superfamily of enzymes and exists as two alternatively spliced isoforms, CYP4F3A and CYP4F3B. CYP4F3 may be involved in leukotriene B4 degradation.

REFERENCES

1. Simpson, A.E. 1997. The cytochrome P450 4 (CYP4) family. Gen. Pharmacol. 28: 351-359.
2. Christmas, P., et al. 1999. Expression of the CYP4F3 gene. tissue-specific splicing and alternative promoters generate high and low K_m forms of leukotriene $B_4\omega$-hydroxylase. J. Biol. Chem. 274: 21191-21199.
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. Christmas, P., et al. 2001. Alternative splicing determines the function of CYP4F3 by switching substrate specificity. J. Biol. Chem. 276: 38166-38172.
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: Cyp4f13 (mouse) mapping to 17 B1.

PRODUCT

Cyp4f13 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 Cyp4f13 shRNA Plasmid (m): sc-142729-SH and Cyp4f13 shRNA (m) Lentiviral Particles: sc-142729-V as alternate gene silencing products.

For independent verification of Cyp4f13 (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-142729A, sc-142729B and sc-142729C.

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

Cyp4f13 siRNA (m) is recommended for the inhibition of Cyp4f13 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.

GENE EXPRESSION MONITORING

Cyp4f13 (G-5): sc-515735 is recommended as a control antibody for monitoring of Cyp4f13 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cyp4f13 gene expression knockdown using RT-PCR Primer: Cyp4f13 (m)-PR: sc-142729-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.