SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4V2 siRNA (h): sc-89024

BACKGROUND

CYP4V2 (Cytochrome P450 4V2) is a 525 amino acid protein that belongs to the cytochrome P450 family. Localized to the endoplasmic reticulum membrane, CYP4V2 is widely expressed in various tissues. Defects in CYP4V2 have been linked to Bietti crystalline corneoretinal dystrophy (BCD), an autosomal recessive retinal dystrophy characterized by multiple glistening intraretinal crystals scattered over the fundus, a characteristic degeneration of the retina and sclerosis of the choroidal vessels, ultimately resulting in progressive night blindness and constriction of the visual field. The homology of CYP4V2 to other members of the cytochrome P450 family suggests that it may play a role in fatty acid and steroid metabolism. Two isoforms of CYP4V2 exist as a result of alternative splicing events.

REFERENCES

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3. Li, A., et al. 2004. Bietti crystalline corneoretinal dystrophy is caused by mutations in the novel gene CYP4V2. Am. J. Hum. Genet. 74: 817-826.
4. Lee, K.Y., et al. 2005. Characterization of Bietti crystalline dystrophy patients with CYP4V2 mutations. Invest. Ophthalmol. Vis. Sci. 46: 3812-3816.
5. Shan, M., et al. 2005. Novel mutations in the CYP4V2 gene associated with Bietti crystalline corneoretinal dystrophy. Mol. Vis. 11: 738-743.
6. Thomas, R.D., et al. 2006. Cytochrome P450 expression and metabolic activation of cooked food mutagen 2-amino-1-methyl-6-phenylimidazo [4,5-b]pyridine (PhIP) in MCF10A breast epithelial cells. Chem. Biol. Interact. 160: 204-216.
7. Lai, T.Y., et al. 2007. Genotype phenotype analysis of Bietti's crystalline dystrophy in patients with CYP4V2 mutations. Invest. Ophthalmol. Vis. Sci. 48: 5212-5220.
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CHROMOSOMAL LOCATION

Genetic locus: CYP4V2 (human) mapping to 4q35.2.

PRODUCT

CYP4V2 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 CYP4V2 shRNA Plasmid (h): sc-89024-SH and CYP4V2 shRNA (h) Lentiviral Particles: sc-89024-V as alternate gene silencing products.

For independent verification of CYP4V2 (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-89024A, sc-89024B and sc-89024C.

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

CYP4V2 siRNA (h) is recommended for the inhibition of CYP4V2 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.

GENE EXPRESSION MONITORING

CYP4V2 (M29-P3B10): sc-101386 is recommended as a control antibody for monitoring of CYP4V2 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 CYP4V2 gene expression knockdown using RT-PCR Primer: CYP4V2 (h)-PR: sc-89024-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.