SANTA CRUZ BIOTECHNOLOGY, INC.

PRCD siRNA (h): sc-106951

BACKGROUND

PRCD (progressive rod-cone degeneration), also known as RP36, is a 54 amino acid single-pass membrane protein, with the first 28 amino acids completely conserved between human and dog. PRCD contains an N-terminal signal peptide, a C-terminal transmembrane domain and four exons, the last of which is noncoding. The promoter region of PRCD consists of several putative TATA boxes and CAAT motifs, as well as binding sites for 36 different transcription factors. Localizing to cytoplasm, PRCD is predominantly expressed in retina. Defects in PRCD may cause retinitis pigmentosa type 36, a retinal dystrophy characterized by retinal pigment deposits visible on fundus examination and primary loss of rod photoreceptor cells, followed by secondary loss of cone photoreceptors. Night vision blindness and loss of midperipheral visual field also typically occur. As retinitis pigmentosa type 36 progresses, far peripheral visual field and central vision are also lost. The gene that encodes PRCD maps to human chromosome 17q25.1.

REFERENCES

1. Aguirre, G.D. and Acland, G.M. 1988. Variation in retinal degeneration phenotype inherited at the prcd locus. Exp. Eye Res. 46: 663-687.
2. Anderson, R.E., et al. 1994. Plasma lipid changes in PRCD-affected and normal miniature poodles given oral supplements of linseed oil. Indications for the involvement of n-3 fatty acids in inherited retinal degenerations. Exp. Eye Res. 58: 129-137.
3. Ray, K., et al. 1996. Nonallelism of erd and prcd and exclusion of the canine RDS/peripherin gene as a candidate for both retinal degeneration loci. Invest. Ophthalmol. Vis. Sci. 37: 783-794.
4. Gropp, K.E., et al. 1997. Differential expression of photoreceptor-specific proteins during disease and degeneration in the progressive rod-cone degeneration (PRCD) retina. Exp. Eye Res. 64: 875-886.
5. Aguirre, G.D., et al. 1997. Diets enriched in docosahexaenoic acid fail to correct progressive rod-cone degeneration (PRCD) phenotype. Invest. Ophthalmol. Vis. Sci. 38: 2387-2407.
6. Acland, G.M., et al. 1998. Linkage analysis and comparative mapping of canine progressive rod-cone degeneration (PRCD) establishes potential locus homology with retinitis pigmentosa (RP17) in humans. Proc. Natl. Acad. Sci. USA 95: 3048-3053.

CHROMOSOMAL LOCATION

Genetic locus: PRCD (human) mapping to 17q25.1.

PRODUCT

PRCD 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 PRCD shRNA Plasmid (h): sc-106951-SH and PRCD shRNA (h) Lentiviral Particles: sc-106951-V as alternate gene silencing products.

For independent verification of PRCD (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-106951A, sc-106951B and sc-106951C.

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

PRCD siRNA (h) is recommended for the inhibition of PRCD 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 PRCD gene expression knockdown using RT-PCR Primer: PRCD (h)-PR: sc-106951-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.