SANTA CRUZ BIOTECHNOLOGY, INC.

retinitis pigmentosa 1 siRNA (h): sc-77767

BACKGROUND

Retinitis pigmentosa 1, also known as Oxygen-regulated protein 1, Retinitis pigmentosa RP1 protein, RP1, ORP1, DCDC4A, FLJ50293, FLJ55454 or FLJ79410, is a novel 2,156 amino acid oxygen-regulated photoreceptor specific to retina. Originally named ORP1 (for "oxygen-regulated protein-1"), the expression of retinitis pigmentosa 1 has been found to be regulated by oxygen levels in the retina. Mutation of the retinitis pigmentosa 1 gene causes dominant retinitis pigmentosa which leads to degeneration of retinal photoreceptor cells and symptoms such as night vision blindness and deficits in the midperipheral visual field. Retinitis pigmentosa 1 may assist in differentiation of photoreceptor cells and has been identified in the cilia of photoreceptors, possibly aiding in both cilial structure and protein transport between inner and outer segments of photoreceptors. Retinitis pigmentosa 1 contains two doublecortin domains and is encoded by a gene which maps to human chromosome 8q12.1.

REFERENCES

1. Blanton, S.H., et al. 1991. Linkage mapping of autosomal dominant retinitis pigmentosa (RP1) to the pericentric region of human chromosome 8. Genomics 11: 857-869.
2. Bowne, S.J., et al. 1999. Mutations in the RP1 gene causing autosomal dominant retinitis pigmentosa. Hum. Mol. Genet. 8: 2121-2128.
3. Pierce, E.A., et al. 1999. Mutations in a gene encoding a new oxygen-regulated photoreceptor protein cause dominant retinitis pigmentosa. Nat. Genet. 22: 248-254.
4. Sullivan, L.S., et al. 1999. Mutations in a novel retina-specific gene cause autosomal dominant retinitis pigmentosa. Nat. Genet. 22: 255-259.
5. Liu, Q., et al. 2002. Identification and subcellular localization of the RP1 protein in human and mouse photoreceptors. Invest. Ophthalmol. Vis. Sci. 43: 22-32.
6. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 603937. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: RP1 (human) mapping to 8q12.1.

PRODUCT

retinitis pigmentosa 1 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 retinitis pigmentosa 1 shRNA Plasmid (h): sc-77767-SH and retinitis pigmentosa 1 shRNA (h) Lentiviral Particles: sc-77767-V as alternate gene silencing products.

For independent verification of retinitis pigmentosa 1 (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-77767A, sc-77767B and sc-77767C.

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

retinitis pigmentosa 1 siRNA (h) is recommended for the inhibition of retinitis pigmentosa 1 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 retinitis pigmentosa 1 gene expression knockdown using RT-PCR Primer: retinitis pigmentosa 1 (h)-PR: sc-77767-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.