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SANTA CRUZ BIOTECHNOLOGY, INC.

peropsin siRNA (m): sc-45796

BACKGROUND

The opsins are important proteins in the visual/irradiance detection cycle where they utilise a retinaldehyde chromophore in their photoisomerase role. Visual pigment-like receptor peropsin, also designated retinal pigment epithelium-derived rhodopsin homologue (RRH), belongs to the opsin subfamily of the larger G protein-coupled receptor 1 family. Peropsin is an integral membrane protein that is crucial to retinal pigment epithelial physiology. It monitors the concentration of retinoids or detects light directly. Peropsin is detected exclusively in the eye, where it localizes to the microvilli surrounding the photoreceptor outer segments of the retinal pigment epithelium.

REFERENCES

1. Sun, H., et al. 1997. Peropsin, a novel visual pigment-like protein located in the apical microvilli of the retinal pigment epithelium. Proc. Natl. Acad. Sci. USA 94: 9893-9898.
2. Chen, P., et al. 2001. A photic visual cycle of rhodopsin regeneration is dependent on RGR. Nat. Genet. 28: 256-260.
3. Tarttelin, E.E., et al. 2003. Expression of opsin genes early in ocular development of humans and mice. Exp. Eye Res. 76: 393-396.
4. Bellingham, J., et al. 2003. In silico characterisation and chromosomal localisation of human RRH (peropsin)—implications for opsin evolution. BMC. Genomics 4: 3.
5. Terakita, A., et al. 2005. The opsins. Genome Biol. 6: 213.
6. Kumbalasiri, T., et al. 2005. Melanopsin and other novel mammalian opsins. Exp. Eye Res. 81: 368-375.

CHROMOSOMAL LOCATION

Genetic locus: Rrh (mouse) mapping to 3 G3.

PRODUCT

peropsin 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 peropsin shRNA Plasmid (m): sc-45796-SH and peropsin shRNA (m) Lentiviral Particles: sc-45796-V as alternate gene silencing products.

For independent verification of peropsin (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-45796A, sc-45796B and sc-45796C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor peropsin gene expression knockdown using RT-PCR Primer: peropsin (m)-PR: sc-45796-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.