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OPN1LW/MW/MW2 shRNA (h) Lentiviral Particles: sc-44074-V

BACKGROUND

G protein-coupled receptors (GPCRs), which are characterized by containing seven transmembrane α helices, elicit G protein-mediated signaling cascades in response to a variety of stimuli. The opsin subfamily, which represents approximately 90% of all GPCRs, is comprised of photoreceptors that are activated by light. It includes the red, green and blue-sensitive opsins and rhodopsin. The opsin subfamily consists of an apoprotein covalently linked to 11-*cis*-retinal, which undergoes isomerization upon the absorption of photons. This isomerization leads to a conformational change of the protein, which results in the activation of hundreds of G proteins. Color is perceived in humans by three pigments, which localize to retinal cone photoreceptor cells. They are the blue-, green- and red-sensitive opsins, which are encoded by OPN1SW, OPN1MW and OPN1LW, respectively. Mutations in the OPN1MW and OPN1LW encoded opsins lead to the X-linked disorders protanopia and deuteranopia, respectively. Mutations in the OPN1SW encoded opsin leads to tritanopia, an autosomal dominant disorder, which is characterized by decreased sensitivity to blue light.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: OPN1MW/OPN1MW2/OPN1LW (human) mapping to Xq28.

PRODUCT

OPN1LW/MW/MW2 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see OPN1LW/MW/MW2 siRNA (h): sc-44074 and OPN1LW/MW/MW2 shRNA Plasmid (h): sc-44074-SH as alternate gene silencing products.

APPLICATIONS

OPN1LW/MW/MW2 shRNA (h) Lentiviral Particles is recommended for the inhibition of OPN1LW, OPN1MW and OPN1MW2 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OPN1LW, OPN1MW and OPN1MW2 gene expression knockdown using RT-PCR Primer: OPN1LW/MW/MW2 (h)-PR: sc-44074-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.