

OA1 siRNA (h): sc-61239

BACKGROUND

G protein-coupled receptors (GPRs or GPCRs), are members of the largest protein family and play a role in many different stimulus-response pathways. G-protein coupled receptors mediate extracellular signals into intracellular signals (G-protein activation). They respond to a great variety of signaling molecules, including hormones, neurotransmitters and other proteins and peptides. GPR143, also designated ocular albinism type 1 protein (OA1), is detected exclusively in pigment cells. OA1, which is a multi-pass membrane protein, is a melanosomal protein expressed primarily in pigment cells. Defects in the gene encoding for OA1 cause ocular albinism, an X-linked disorder mainly characterized by retinal hypopigmentation and visual impairment.

REFERENCES

1. Schiaffino, M.V., et al. 1996. Analysis of the OA1 gene reveals mutations in only one-third of patients with X-linked ocular albinism. *Hum. Mol. Genet.* 4: 2319-2325.
2. Schiaffino, M.V., et al. 1999. Ocular albinism: eviden system. *Nat. Genet.* 23: 108-112.
3. Oetting, W.S., et al. 1999. Molecular basis of albinism: mutations and polymorphisms of pigmentation genes associated with albinism. *Hum. Mutat.* 13: 99-115.
4. Rosenberg, T., et al. 1999. X-linked ocular albinism: prevalence and mutations—a national study. *Eur. J. Hum. Genet.* 6: 570-577.
5. Bassi, M.T., et al. 2001. Diverse prevalence of large deletions within the OA1 gene in ocular albinism type 1 patients from Europe and North America. *Hum. Genet.* 108: 51-54.
6. Oetting, W.S. 2002. New insights into ocular albinism type 1 (OA1): Mutations and polymorphisms of the OA1 gene. *Hum. Mutat.* 19: 85-92.
7. Vetrini, F., et al. 2004. The microphthalmia transcription factor (Mitf) controls expression of the ocular albinism type 1 gene: link between melanin synthesis and melanosome biogenesis. *Mol. Cell. Biol.* 24: 6550-6559.

CHROMOSOMAL LOCATION

Genetic locus: GPR143 (human) mapping to Xp22.2.

PRODUCT

OA1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see OA1 shRNA Plasmid (h): sc-61239-SH and OA1 shRNA (h) Lentiviral Particles: sc-61239-V as alternate gene silencing products.

For independent verification of OA1 (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-61239A, sc-61239B and sc-61239C.

PROTOCOLS

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

OA1 siRNA (h) is recommended for the inhibition of OA1 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 μ M in 66 μ l. 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

OA1 (C-6): sc-398602 is recommended as a control antibody for monitoring of OA1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 OA1 gene expression knockdown using RT-PCR Primer: OA1 (h)-PR: sc-61239-PR (20 μ l). 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.