



OSC siRNA (h): sc-91491

BACKGROUND

OSC, also known as LSS (Lanosterol synthase), is a 732 amino acid protein that contains four PFTB repeats and belongs to the terpene cyclase family. Functioning in the pathway of terpene metabolism, OSC catalyzes the first step in the biosynthesis of cholesterol, vitamin D and steroid hormones, namely the conversion of (S)-2,3 oxidosqualene to lanosterol. Lanosterol is a tetracyclic triterpenoid that is required for the synthesis of all steroids. Due to its role in lanosterol production, OSC is crucial for proper cholesterol formation and overall steroid function. Human OSC shares 83% homology with its rat counterpart, suggesting a conserved role between species. Multiple isoforms of OSC exist as a result of alternative splicing events.

REFERENCES

1. Baker, C.H., et al. 1995. Molecular cloning of the human gene encoding lanosterol synthase from a liver cDNA library. *Biochem. Biophys. Res. Commun.* 213: 154-160.
2. Sung, C.K., et al. 1995. Molecular cloning of cDNA encoding human lanosterol synthase. *Biol. Pharm. Bull.* 18: 1459-1461.
3. Young, M., et al. 1996. The human lanosterol synthase gene maps to chromosome 21q22.3. *Hum. Genet.* 97: 620-624.
4. Mark, M., et al. 1996. Effects of a novel 2,3-oxidosqualene cyclase inhibitor on the regulation of cholesterol biosynthesis in Hep G2 cells. *J. Lipid Res.* 37: 148-158.
5. Roessler, E., et al. 1999. Structure of the human Lanosterol synthase gene and its analysis as a candidate for holoprosencephaly (HPE1). *Hum. Genet.* 105: 489-495.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600909. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Ruf, A., et al. 2004. The monotopic membrane protein human oxidosqualene cyclase is active as monomer. *Biochem. Biophys. Res. Commun.* 315: 247-254.

CHROMOSOMAL LOCATION

Genetic locus: LSS (human) mapping to 21q22.3.

PRODUCT

OSC 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 OSC shRNA Plasmid (h): sc-91491-SH and OSC shRNA (h) Lentiviral Particles: sc-91491-V as alternate gene silencing products.

For independent verification of OSC (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-91491A, sc-91491B and sc-91491C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

OSC siRNA (h) is recommended for the inhibition of OSC 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

OSC (D-6): sc-514507 is recommended as a control antibody for monitoring of OSC 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 OSC gene expression knockdown using RT-PCR Primer: OSC (h)-PR: sc-91491-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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