

Osgep siRNA (m): sc-151331

BACKGROUND

O-sialoglycoprotein endopeptidases cleave the polypeptide backbone of membrane glycoproteins that contain clusters of O-linked sialoglycans. Osgep (O-sialoglycoprotein endopeptidase), also known as GCPL1, is a 335 amino acid protein that is a member of the peptidase M22 family. Osgep specifically cleaves the 31-Arg-I-Asp-32 bond in glycophorin A, but it does not cleave desialylated glycoproteins, unglycosylated proteins or glycoproteins that are only N-glycosylated. Though ubiquitously expressed at low levels, highest levels of Osgep are found in liver, skeletal muscle and kidney. The gene encoding Osgep maps to human chromosome 14q11.2, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the Presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

REFERENCES

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- Ikeda, S., et al. 2002. Identification of the functional elements in the bidirectional promoter of the mouse O-sialoglycoprotein endopeptidase and APEX nuclease genes. *Biochem. Biophys. Res. Commun.* 296: 785-791.
- Seki, Y., et al. 2002. Sequencing analysis of a putative human O-sialoglycoprotein endopeptidase gene (OSGEP) and analysis of a bidirectional promoter between the OSGEP and APEX genes. *Gene* 285: 101-108.
- Heilig, R., et al. 2003. The DNA sequence and analysis of human chromosome 14. *Nature* 421: 601-607.
- Godbolt, A.K., et al. 2004. A presenilin 1 R278I mutation presenting with language impairment. *Neurology* 63: 1702-1704.
- Ng, A.P., et al. 2006. Cleavage of misfolded nuclear receptor corepressor confers resistance to unfolded protein response-induced apoptosis. *Cancer Res.* 66: 9903-9912.

CHROMOSOMAL LOCATION

Genetic locus: Osgep (mouse) mapping to 14 C1.

PRODUCT

Osgep 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Osgep shRNA Plasmid (m): sc-151331-SH and Osgep shRNA (m) Lentiviral Particles: sc-151331-V as alternate gene silencing products.

For independent verification of Osgep (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-151331A, sc-151331B and sc-151331C.

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

Osgep siRNA (m) is recommended for the inhibition of Osgep 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 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

Osgep (H-3): sc-393199 is recommended as a control antibody for monitoring of Osgep 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 Osgep gene expression knockdown using RT-PCR Primer: Osgep (m)-PR: sc-151331-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.

PROTOCOLS

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