SANTA CRUZ BIOTECHNOLOGY, INC.

Osteoglycin siRNA (h): sc-61267

BACKGROUND

The small leucine-rich proteoglycan (SLRP) family of proteins contains various proteins such as Decorin, Biglycan, Fibromodulin, Keratocan, Lumican, Osteoadherin and Osteoglycin. These proteins all have similar functions as they all mediate extracellular matrix organization and act as binding partners of TGFβ. Osteoglycin, which also may be designated osteoinductive factor (OIF), is a secreted protein detected in bone tissues. Osteoglycin induces the formation of bone in conjunction with either TFGβ1 or TGFβ2. The precursor form of the OGN gene product, designated Mimecan, is subject to *in situ* proteolytic cleavage to yield the mature Osteoglycin.

REFERENCES

1. Tasheva, E.S., et al. 1997. Differential splicing and alternative polyadenylation generate multiple mimecan mRNA transcripts. J. Biol. Chem. 272: 32551-32556.
2. Tasheva, E.S., et al. 1999. The bovine mimecan gene. Molecular cloning and characterization of two major RNA transcripts generated by alternative use of two splice acceptor sites in the third exon. J. Biol. Chem. 274: 18693-18701.
3. Pellegata, N.S., et al. 2000. Mutations in KERA, encoding keratocan, cause cornea plana. Nat. Genet. 25: 91-95.
4. Tasheva, E.S., et al. 2004. Analysis of transcriptional regulation of the small leucine rich proteoglycans. Mol. Vis. 10: 758-772.
5. Moali, C., et al. 2005. Substrate-specific modulation of a multi-substrate proteinase. C-terminal processing of fibrillar procollagens is the only BMP-1 dependent activity to be enhanced by PCPE-1. J. Biol. Chem. 280: 24188-24194.
6. Wang, X., et al. 2005. Characterization of the non-collagenous proteins in avian cortical and medullary bone. Comp. Biochem. Physiol. B, Biochem. Mol. Biol. 140: 665-672.

CHROMOSOMAL LOCATION

Genetic locus: OGN (human) mapping to 9q22.31.

PRODUCT

Osteoglycin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Osteoglycin shRNA Plasmid (h): sc-61267-SH and Osteoglycin shRNA (h) Lentiviral Particles: sc-61267-V as alternate gene silencing products.

For independent verification of Osteoglycin (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-61267A, sc-61267B and sc-61267C.

APPLICATIONS

Osteoglycin siRNA (h) is recommended for the inhibition of Osteoglycin 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 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.

GENE EXPRESSION MONITORING

Osteoglycin (G-1): sc-374463 is recommended as a control antibody for monitoring of Osteoglycin 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Osteoglycin gene expression knockdown using RT-PCR Primer: Osteoglycin (h)-PR: sc-61267-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, Q.H., et al. 2017. Loss of osteoglycin promotes angiogenesis in limb ischaemia mouse models via modulation of vascular endothelial growth factor and vascular endothelial growth factor receptor 2 signalling pathway. Cardiovasc. Res. 113: 70-80.

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.

RESEARCH USE

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