

Sulf-2 siRNA (r): sc-270611

BACKGROUND

Sulf-2 (sulfatase 2), also known as HSulf-2, is an extracellular endosulfatase belonging to the sulfatase family. Members of the sulfatase family each contain a conserved active site with a posttranslationally generated α -formylglycine that is essential for their catalytic activity. These enzymes are responsible for the hydrolysis of sulfate ester bonds. Sulf-1 (sulfatase 1) and Sulf-2 specifically interact with heparin sulfate proteoglycans (HSPGs) and hydrolyze the glucosamine-6-sulfate modifications, thus regulating the interactions of HSPGs with a variety of signaling molecules. As key components of cell surfaces and extracellular matrices, HSPGs modulate growth factor activities and thereby influence cell growth and differentiation. Additionally, HSPGs play a critical role in regulating tumor cell metastasis by mediating cell adhesion and the activities of growth and angiogenic factors. This suggests an important role for Sulf-1 and Sulf-2 in tumor progression.

REFERENCES

1. Morimoto-Tomita, M., et al. 2002. Cloning and characterization of two extracellular heparin-degrading endosulfatases in mice and humans. *J. Biol. Chem.* 277: 49175-49185.
2. Saad, O.M., et al. 2005. Compositional profiling of heparin/heparan sulfate using mass spectrometry: assay for specificity of a novel extracellular human endosulfatase. *Glycobiology* 15: 818-826.
3. Dai, Y., et al. 2005. HSulf-1 and HSulf-2 are potent inhibitors of myeloma tumor growth *in vivo*. *J. Biol. Chem.* 280: 40066-40073.
4. Morimoto-Tomita, M., et al. 2005. Sulf-2, a proangiogenic heparan sulfate endosulfatase, is upregulated in breast cancer. *Neoplasia* 7: 1001-1010.

CHROMOSOMAL LOCATION

Genetic locus: Sulf2 (mouse) mapping to 3q42.

PRODUCT

Sulf-2 siRNA (r) 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 Sulf-2 shRNA Plasmid (r): sc-270611-SH and Sulf-2 shRNA (r) Lentiviral Particles: sc-270611-V as alternate gene silencing products.

For independent verification of Sulf-2 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270611A, sc-270611B and sc-270611C.

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

Sulf-2 siRNA (r) is recommended for the inhibition of Sulf-2 expression in rat 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

Sulf-2 (G-4): sc-271772 is recommended as a control antibody for monitoring of Sulf-2 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 Sulf-2 gene expression knockdown using RT-PCR Primer: Sulf-2 (r)-PR: sc-270611-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, H.Y., et al. 2019. Sulfatase 2 mediates, partially, the expression of endothelin-1 and the additive effect of Ang II-induced endothelin-1 expression by CXCL8 in vascular smooth muscle cells from spontaneously hypertensive rats. *Cytokine* 114: 98-105.

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.