

glypican-1 siRNA (m): sc-40639

BACKGROUND

Glypican-1 (GPC1), a member of the glycosylphosphatidylinositol-anchored cell surface heparan sulfate proteoglycans, is involved with cell adhesion and migration, lipoprotein metabolism, modulation of growth factor activities and anticoagulation. Glypican-1 binds to and modulates the activity of several fibroblast growth factors (FGFs), including FGF-1, FGF-2 and FGF-7. Glypican-1 acts as an extracellular chaperone for VEGF165 to help restore receptor binding ability after oxidation. The heparan sulfate chains of glypican-1 mediate specific binding of glypican-1 to VEGF165. When present on the surface of marrow stromal cells, glypican-1 may aid in the maintenance and development of hematopoietic stem and progenitor cells. Human pancreatic cancer cells express a large amount of glypican-1 when compared to glypican-1 levels in normal pancreatic cells. Glypican-1 may play an important role in the response of pancreatic cancer cells to mitogenic stimuli, such as FGF-2. The gene encoding human glypican-1 maps to chromosome 2q37.3.

REFERENCES

- David, G. 1993. Integral membrane heparan sulfate proteoglycans. *FASEB J.* 7: 1023-1030.
- Vermeesch, J.R., et al. 1995. Assignment of the human glypican gene (GPC1) to 2q35-q37 by fluorescence *in situ* hybridization. *Genomics* 25: 327-339.
- Weksberg, R., et al. 1996. Glypicans: a growing trend. *Nat. Genet.* 12: 225-227.
- Steinfeld, R., et al. 1996. Stimulation of fibroblast growth factor receptor-1 occupancy and signaling by cell surface-associated syndecans and glypican. *J. Cell Biol.* 133: 405-416.
- Bonneh-Barkay, D., et al. 1997. Identification of glypican as a dual modulator of the biological activity of fibroblast growth factors. *J. Biol. Chem.* 272: 12415-12421.
- Kleeff, J., et al. 1998. The cell-surface heparan sulfate proteoglycan glypican-1 regulates growth factor action in pancreatic carcinoma cells and is overexpressed in human pancreatic cancer. *J. Clin. Invest.* 102: 1662-1673.

CHROMOSOMAL LOCATION

Genetic locus: Gpc1 (mouse) mapping to 1 D.

PRODUCT

glypican-1 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 glypican-1 shRNA Plasmid (m): sc-40639-SH and glypican-1 shRNA (m) Lentiviral Particles: sc-40639-V as alternate gene silencing products.

For independent verification of glypican-1 (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-40639A, sc-40639B and sc-40639C.

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

glypican-1 siRNA (m) is recommended for the inhibition of glypican-1 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

glypican-1 (A-10): sc-365000 is recommended as a control antibody for monitoring of glypican-1 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 glypican-1 gene expression knockdown using RT-PCR Primer: glypican-1 (m)-PR: sc-40639-PR (20 μ l, 421 bp). 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.