SANTA CRUZ BIOTECHNOLOGY, INC.

glypican-4 siRNA (r): sc-270214

BACKGROUND

The glypicans are a family of glycosylphosphatidylinositol-anchored heparan sulfate proteoglycans that are involved in the control of cell growth and division. Glypican-4 (GPC4), also known as K-glypican, is a 556 amino acid cell surface proteoglycan that is thought to play a role in the development of the central nervous system and tubules of the kidney. Following cleavage, glypican-4 becomes a secreted protein which localizes to extracellular space. Glypican-4 regulates FGF-2 activity during cortical neurogenesis and is encoded by a gene that maps to human chromosome Xq26.2 and mouse chromosome X A5. Deletion of the glypican-4 gene may be associated with Simpson-Golabi-Behmel syndrome, an X-linked syndrome that is clinically similar to Beckwith-Wiedemann syndrome.

REFERENCES

1. Watanabe, K., et al. 1995. K-glypican: a novel GPI-anchored heparan sulfate proteoglycan that is highly expressed in developing brain and kidney. J. Cell Biol. 130: 1207-1218.
2. Huber, R., et al. 1998. Glypican 3 and glypican 4 are juxtaposed in Xq26.1. Gene 225: 9-16.
3. Veugelers, M., et al. 1998. GPC4, the gene for human K-glypican, flanks GPC3 on xq26: deletion of the GPC3-GPC4 gene cluster in one family with Simpson-Golabi-Behmel syndrome. Genomics 53: 1-11.
4. Siebertz, B., et al. 1999. Expression of glypican-4 in haematopoietic-progenitor and bone-marrow-stromal cells. Biochem. J. 344: 937-943.
5. Hagihara, K., et al. 2000. Glypican-4 is an FGF2-binding heparan sulfate proteoglycan expressed in neural precursor cells. Dev. Dyn. 219: 353-367.
6. Veugelers, M., et al. 2000. Mutational analysis of the GPC3/GPC4 glypican gene cluster on Xq26 in patients with Simpson-Golabi-Behmel syndrome: identification of loss-of-function mutations in the GPC3 gene. Hum. Mol. Genet. 9: 1321-1328.
7. Karumanchi, S.A., et al. 2001. Cell surface glypicans are low-affinity endostatin receptors. Mol. Cell 7: 811-822.
8. Online Mendelian Inheritance in Man, OMIM™. 2010. Johns Hopkins University, Baltimore, MD. MIM Number: 300168. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Gpc4 (rat) mapping to Xq36.

PRODUCT

glypican-4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see glypican-4 shRNA Plasmid (r): sc-270214-SH and glypican-4 shRNA (r) Lentiviral Particles: sc-270214-V as alternate gene silencing products.

For independent verification of glypican-4 (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-270214A, sc-270214B and sc-270214C.

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.

APPLICATIONS

glypican-4 siRNA (r) is recommended for the inhibition of glypican-4 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor glypican-4 gene expression knockdown using RT-PCR Primer: glypican-4 (r)-PR: sc-270214-PR (20 µl). 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.