

frizzled-8 siRNA (h): sc-39992

BACKGROUND

The frizzled gene, originally identified in *Drosophila melanogaster*, is involved in the development of tissue polarity. The mammalian homolog of frizzled, as well as several secreted mammalian frizzled-related proteins (FRPs), have been described. The frizzled proteins contain seven transmembrane domains, a cysteine-rich domain in the extracellular region and a carboxy-terminal Ser/Thr-xxx-Val motif. They function as receptors for Wnt and are generally coupled to G proteins. The cysteine-rich domain of frizzled-8 blocks endogenous Wnts and the effects of Wnt-1 and Wnt-5 on proliferation. The mouse frizzled-8 gene, which encodes a Wnt receptor, is a potent cancer-associated activator of the β -catenin-TCF pathway. The frizzled-8 gene contains no introns. Frizzled-8 mRNA has been detected in fetal brain and kidney, and also in adult pancreas, skeletal muscle, kidney and heart. Frizzled is highly expressed in HeLa S3 (cervical uterus cancer) cells and A549 lung cancer cells.

REFERENCES

1. Wang, Y., et al. 1996. A large family of putative transmembrane receptors homologous to the product of the *Drosophila* tissue polarity gene frizzled. *J. Biol. Chem.* 271: 4468-4476.
2. Yang-Snyder, J., et al. 1996. A frizzled homolog functions in a vertebrate Wnt signaling pathway. *Curr. Biol.* 6: 1302-1306.
3. Rattner, A., et al. 1997. A family of secreted proteins contains homology to the cysteine-rich ligand-binding domain of frizzled receptors. *Proc. Natl. Acad. Sci. USA* 94: 2859-2863.
4. Finch, P.W., et al. 1997. Purification and molecular cloning of a secreted, frizzled-related antagonist of Wnt action. *Proc. Natl. Acad. Sci. USA* 94: 6770-6775.
5. Melkonyan, H.S., et al. 1997. SARPs: a family of secreted apoptosis-related proteins. *Proc. Natl. Acad. Sci. USA* 94: 13636-13641.
6. Saitoh, T., et al. 2001. Molecular cloning and characterization of human frizzled-8 gene on chromosome 10p11.2. *Int. J. Oncol.* 8: 991-996.
7. Castelo-Branco, G., et al. 2003. Differential regulation of midbrain dopaminergic neuron development by Wnt-1, Wnt-3a and Wnt-5a. *Proc. Natl. Acad. Sci. USA* 100: 12747-12752.

CHROMOSOMAL LOCATION

Genetic locus: FZD8 (human) mapping to 10p11.21.

PRODUCT

frizzled-8 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see frizzled-8 shRNA Plasmid (h): sc-39992-SH and frizzled-8 shRNA (h) Lentiviral Particles: sc-39992-V as alternate gene silencing products.

For independent verification of frizzled-8 (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-39992A, sc-39992B and sc-39992C.

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

frizzled-8 siRNA (h) is recommended for the inhibition of frizzled-8 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor frizzled-8 gene expression knockdown using RT-PCR Primer: frizzled-8 (h)-PR: sc-39992-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. Spanjer, A.I., et al. 2016. TGF- β -induced profibrotic signaling is regulated in part by the Wnt receptor frizzled-8. *FASEB J.* 30: 1823-1835.
2. Lewis, A., et al. 2022. Small-molecule Wnt inhibitors are a potential novel therapy for intestinal fibrosis in Crohns disease. *Clin. Sci.* 136: 1405-1423.

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.