SANTA CRUZ BIOTECHNOLOGY, INC.

frizzled-9 siRNA (m): sc-39995

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 frizzled-9 gene is located within the Williams syndrome common deleted region at chromosomal band 7q11.23. Heterozygous deletion of the frizzled-9 gene may contribute to the Williams syndrome phenotype. In mouse, frizzled-9 overexpression can induce the hyperphosphorylation and relocalization of Dvl-1 from the cytoplasm to the cell membrane and cytosolic β-catenin accumulation. In rat, frizzled-9 is important in Wnt/β-catenin signaling in 293T cells. Frizzled-9 is expressed predominantly in brain, testis, eye, skeletal muscle, and kidney.

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. Wang, Y.K., et al. 1999. Characterization and expression pattern of the frizzled gene Fzd9, the mouse homolog of FZD9 which is deleted in Williams-Beuren syndrome. Genomics 57: 235-248.
7. Karasawa, T., et al. 2002. Frizzled-9 is activated by Wnt-2 and functions in Wnt/β-catenin signaling. J. Biol. Chem. 277: 37479-37486.

CHROMOSOMAL LOCATION

Genetic locus: Fzd9 (mouse) mapping to 5 G2.

PRODUCT

frizzled-9 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see frizzled-9 shRNA Plasmid (m): sc-39995-SH and frizzled-9 shRNA (m) Lentiviral Particles: sc-39995-V as alternate gene silencing products.

For independent verification of frizzled-9 (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-39995A, sc-39995B and sc-39995C.

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

frizzled-9 siRNA (m) is recommended for the inhibition of frizzled-9 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 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 frizzled-9 gene expression knockdown using RT-PCR Primer: frizzled-9 (m)-PR: sc-39995-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. Wellenstein, M.D., et al. 2019. Loss of p53 triggers WNT-dependent systemic inflammation to drive breast cancer metastasis. Nature 572: 538-542.

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.