SANTA CRUZ BIOTECHNOLOGY, INC.

frizzled-3 siRNA (h): sc-39981

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 FRPs are involved in the Wnt signaling pathway by regulating the intracellular levels of β-catenin. Frizzled-3 (Fz-3) is a widely expressed, 666 amino acid protein, with relatively high expression in the central nervous system. Frizzled-3 has been associated with schizophrenia and has been shown to play a role in neural crest formation and hair follicle development. Two named isoforms of frizzled-3 exist as a result of alternative splicing events.

REFERENCES

1. Kirikoshi, H., et al. 2000. Molecular cloning and genomic structure of human frizzled-3 at chromosome 8p21. Biochem. Biophys. Res. Commun. 271: 8-14.
2. Sala, C.F., et al. 2000. Identification, gene structure, and expression of human frizzled-3 (FZD3). Biochem. Biophys. Res. Commun. 273: 27-34.
3. Tan, C., et al. 2001. Kermit, a frizzled interacting protein, regulates frizzled 3 signaling in neural crest development. Development 128: 3665-3674.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606143. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Wang, Y., et al. 2002. Frizzled-3 is required for the development of major fiber tracts in the rostral CNS. J. Neurosci. 22: 8563-8573.
6. Katsu, T., et al. 2003. The human frizzled-3 (FZD3) gene on chromosome 8p21, a receptor gene for Wnt ligands, is associated with the susceptibility to schizophrenia. Neurosci. Lett. 353: 53-56.
7. Jeong, S.H., et al. 2006. Investigation of genetic association between human Frizzled homolog 3 gene (FZD3) and schizophrenia: results in a Korean population and evidence from meta-analysis. Psychiatry Res. 143: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: FZD3 (human) mapping to 8p21.1.

PRODUCT

frizzled-3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see frizzled-3 shRNA Plasmid (h): sc-39981-SH and frizzled-3 shRNA (h) Lentiviral Particles: sc-39981-V as alternate gene silencing products.

For independent verification of frizzled-3 (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-39981A, sc-39981B and sc-39981C.

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-3 siRNA (h) is recommended for the inhibition of frizzled-3 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 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.

GENE EXPRESSION MONITORING

frizzled-3 (C-1): sc-376105 is recommended as a control antibody for monitoring of frizzled-3 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 frizzled-3 gene expression knockdown using RT-PCR Primer: frizzled-3 (h)-PR: sc-39981-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.