SANTA CRUZ BIOTECHNOLOGY, INC.

FRP-1 siRNA (h): sc-39998

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, FRP-1 (also designated SARP2), FRP-2 (also designated SARP1), FRP-3, FRP-4 and SARP3 (also designated FRP-5), have been identified. The Frizzled proteins contain seven transmembrane domains, a cysteine-rich domain in the extracellular region and a carboxy terminal Ser/Thr-xxx-Val motif, and they function as receptors for Wnt. The Frizzled-1 gene maps to human chromosome 7q21 and is expressed in adult heart, placenta, lung, kidney, pancreas, prostate and ovary and in fetal lung and kidney. Frizzled-2 is expressed in adult heart and fetal brain, lung and kidney. The frizzled related proteins FRP-1, FRP-2, FRP-3, FRP-4 and SARP3 are secreted proteins that contain regions of homology to the cysteine-rich ligand-binding domain of frizzled and a conserved hydrophilic carboxy terminal. The gene encoding human SARP3 maps to chromosome 4q31.3 and is expressed in retinal pigment epithelium (RPE) and pancreas, while expression of FRP-1,2 and 4 is high in developing tissues. The FRPs/SARPs are involved in the Wnt signaling pathway by regulating the intracellular levels of β-catenin.

REFERENCES

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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. Sagara, N., et al. 1998. Molecular cloning, differential expression, and chromosomal localization of human frizzled-1, frizzled-2, and frizzled-7. Biochem. Biophys. Res. Commun. 252: 117-122.
7. Chang, J.T., et al. 1998. Cloning and characterization of a secreted frizzled-related protein that is expressed by the retinal pigment epithelium. Hum. Mol. Genet. 8: 575-583.
8. Leimeister, C., et al. 1998. Developmental expression patterns of mouse sFRP genes encoding members of the secreted frizzled related protein family. Mech. Dev. 75: 29-42.

CHROMOSOMAL LOCATION

Genetic locus: SFRP1 (human) mapping to 8p11.21.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

FRP-1 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 FRP-1 shRNA Plasmid (h): sc-39998-SH and FRP-1 shRNA (h) Lentiviral Particles: sc-39998-V as alternate gene silencing products.

For independent verification of FRP-1 (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-39998A, sc-39998B and sc-39998C.

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

FRP-1 siRNA (h) is recommended for the inhibition of FRP-1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FRP-1 gene expression knockdown using RT-PCR Primer: FRP-1 (h)-PR: sc-39998-PR (20 µl, 450 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.