

# frizzled-6 siRNA (m): sc-39989

## BACKGROUND

Frizzled-6 (FZD6, also known as frizzled homolog 6 in *Drosophila*) is a seven-transmembrane domain receptor that binds the Wnt ligand and influences macroscopic hair patterning and other tissue polarity events. Frizzled-6 protein contains a signal peptide and a cysteine-rich domain (CRD) in the N-terminal extracellular region, and does not contain a C-terminal PDZ domain-binding motif. Frizzled-3 and frizzled-6 influence neural tube closure and the planar orientation of hair bundles on a subset of auditory and vestibular sensory cells. Madin-Darby canine kidney (MDCK) cells are competent to form tubules *in vitro* and express the frizzled-6 receptor, which is known to form a complex with Wnt-4 through the CRD in this cell type. Frizzled-6 is expressed as a 4.4 kb mRNA in various human tissues, including adult heart, brain, placenta, lung, liver, skeletal muscle, kidney, pancreas, thymus, prostate, testis, ovary, small intestine and colon.

## REFERENCES

1. Tokuhara, M., et al. 1998. Molecular cloning of human frizzled-6. *Biochem. Biophys. Res. Commun.* 243: 622-627.
2. Yanagawa, S., et al. 1998. Identification and characterization of a novel line of *Drosophila* Schneider S2 cells that respond to wingless signaling. *J. Biol. Chem.* 273: 32353-32359.
3. Golan, T., et al. 2004. The human frizzled-6 (HFz6) acts as a negative regulator of the canonical Wnt.  $\beta$ -catenin signaling cascade. *J. Biol. Chem.* 279: 14879-14888.
4. Guo, N., et al. 2004. Frizzled-6 controls hair patterning in mice. *Proc. Natl. Acad. Sci. USA* 101: 9277-9281.
5. Lyons, J.P., et al. 2004. Wnt-4 activates the canonical  $\beta$ -catenin-mediated Wnt pathway and binds frizzled-6 CRD: functional implications of Wnt/ $\beta$ -catenin activity in kidney epithelial cells. *Exp. Cell Res.* 298: 369-387.
6. Gregorieff, A., et al. 2005. Expression pattern of Wnt signaling components in the adult intestine. *Gastroenterology* 129: 626-638.
7. Yang, L., et al. 2006. Bone morphogenetic protein-2 modulates Wnt and frizzled expression and enhances the canonical pathway of Wnt signaling in normal keratinocytes. *J. Dermatol. Sci.* 42: 111-119.

## CHROMOSOMAL LOCATION

Genetic locus: Fzd6 (mouse) mapping to 15 B3.1.

## PRODUCT

frizzled-6 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see frizzled-6 shRNA Plasmid (m): sc-39989-SH and frizzled-6 shRNA (m) Lentiviral Particles: sc-39989-V as alternate gene silencing products.

For independent verification of frizzled-6 (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-39989A, sc-39989B and sc-39989C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

frizzled-6 siRNA (m) is recommended for the inhibition of frizzled-6 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

frizzled-6 (C-12): sc-393791 is recommended as a control antibody for monitoring of frizzled-6 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor frizzled-6 gene expression knockdown using RT-PCR Primer: frizzled-6 (m)-PR: sc-39989-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.