

FRP-4 (N-19): sc-22498

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

- 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.
- Yang-Snyder, J., et al. 1996. A frizzled homolog functions in a vertebrate Wnt signaling pathway. *Curr. Biol.* 6: 1302-1306.
- 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.
- 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.
- Melkonyan, H.S., et al. 1997. SARPs: a family of secreted apoptosis-related proteins. *Proc. Natl. Acad. Sci. USA* 94: 13636-13641.
- 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.
- 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.
- 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: SFRP4 (human) mapping to 7p14.1; Sfrp4 (mouse) mapping to 13 A2.

SOURCE

FRP-4 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of FRP-4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22498 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

FRP-4 (N-19) is recommended for detection of FRP-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

FRP-4 (N-19) is also recommended for detection of FRP-4 in additional species, including bovine and porcine.

Suitable for use as control antibody for FRP-4 siRNA (h): sc-40002, FRP-4 siRNA (m): sc-40003, FRP-4 shRNA Plasmid (h): sc-40002-SH, FRP-4 shRNA Plasmid (m): sc-40003-SH, FRP-4 shRNA (h) Lentiviral Particles: sc-40002-V and FRP-4 shRNA (m) Lentiviral Particles: sc-40003-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Kasaai, B., et al. 2012. Spatial and temporal localization of WNT signaling proteins in a mouse model of distraction osteogenesis. *J. Histochem. Cytochem.* 60: 219-228.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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