

frizzled-2 (K19R): sc-74019

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. Expression of frizzled-2 can be observed in the fetal kidney and lung and in the adult ovary and colon. The Wnt/cGMP/Ca²⁺ pathway is mediated by frizzled-2. It binds Wnt proteins and signals by activating the release of stored calcium. Expression of frizzled-2 is regulated by Angiotensin II. Activated frizzled-2 suppresses the activity of protein kinase G, and activates NFAT-dependent transcription, the phosphatidylinositol pathway and calcium sensitive enzymes.

REFERENCES

1. Zhao, Z., et al. 1995. A human homologue of the *Drosophila* polarity gene frizzled has been identified and mapped to 17q21.1. *Genomics* 27: 370-373.
2. 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.
3. Malbon, C.C., et al. 2004. Frizzleds: new members of the superfamily of G protein-coupled receptors. *Front. Biosci.* 9: 1048-1058.
4. Castoldi, G., et al. 2005. Angiotensin II modulates frizzled-2 receptor expression in rat vascular smooth muscle cells. *Clin. Sci.* 108: 523-530.
5. Rodriguez, J., et al. 2005. SFRP1 regulates the growth of retinal ganglion cell axons through the Fz2 receptor. *Nat. Neurosci.* 8: 1301-1309.
6. Jiang, F., et al. 2006. Gene expression profile of quiescent and activated rat hepatic stellate cells implicates Wnt signaling pathway in activation. *J. Hepatol.* 45: 401-409.
7. Ma, L., et al. 2006. Suppression of cyclic GMP-dependent protein kinase is essential to the Wnt/cGMP/Ca²⁺ pathway. *J. Biol. Chem.* 281: 30990-31001.
8. Harris, K.E., et al. 2007. Different Wnt signals act through the frizzled and RYK receptors during *Drosophila* salivary gland migration. *Development* 134: 2017-2025.
9. Hurson, C.J., et al. 2007. Gene expression analysis in human osteoblasts exposed to dexamethasone identifies altered developmental pathways as putative drivers of osteoporosis. *BMC Musculoskelet. Disord.* 8: 12.

CHROMOSOMAL LOCATION

Genetic locus: Fzd2 (mouse) mapping to 11 E1.

SOURCE

frizzled-2 (K19R) is a rat monoclonal antibody raised against the extracellular domain of frizzled-2 of mouse origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

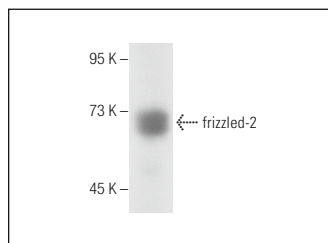
frizzled-2 (K19R) is recommended for detection of frizzled-2 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with mouse frizzled-1, -3, -4, -5, -6, -7, or -8.

Suitable for use as control antibody for frizzled-2 siRNA (m): sc-39980, frizzled-2 shRNA Plasmid (m): sc-39980-SH and frizzled-2 shRNA (m) Lentiviral Particles: sc-39980-V.

Molecular Weight of frizzled-2: 65 kDa.

Positive Controls: mouse skeletal muscle extract: sc-364250.

DATA



frizzled-2 (K19R): sc-74019. Western blot analysis of frizzled-2 expression in mouse skeletal muscle tissue extract.

SELECT PRODUCT CITATIONS

1. Yang, L., et al. 2020. Induction of DNMT3B by PGE2 and IL6 at distant metastatic sites promotes epigenetic modification and breast cancer colonization. *Cancer Res.* 80: 2612-2627.
2. Liu, S.G., et al. 2020. Iridinibin inhibits Wnt/β-catenin signal pathway via promoter demethylation of WIF-1. *BMC Complement. Med. Ther.* 20: 250.
3. Rogan, M.R., et al. 2021. *Ehrlichia chaffeensis* TRP120 is a Wnt ligand mimetic that interacts with Wnt receptors and contains a novel repetitive short linear motif that activates Wnt signaling. *mSphere* 6: e00216-21.
4. Nualart, F., et al. 2023. Hyperglycemia increases SCO-spondin and Wnt5a secretion into the cerebrospinal fluid to regulate ependymal cell beating and glucose sensing. *PLoS Biol.* 21: e3002308.

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.