

frizzled-4 (3G7): sc-293454

BACKGROUND

Frizzled-4 is a 537 amino acid protein encoded by the human gene FZD4. Frizzled-4 acts as a receptor for Wnt proteins. Most frizzled receptors are coupled to the β -catenin canonical signaling pathway, which leads to the activation of disheveled proteins, inhibition of GSK-3 kinase, nuclear accumulation of β -catenin and activation of Wnt target genes. A second signaling pathway involving PKC and calcium fluxes has been seen for some family members, but it is not yet clear if it represents a distinct pathway or if it can be integrated in the canonical pathway, as PKC seems to be required for Wnt-mediated inactivation of GSK-3 kinase. Both pathways seem to involve interactions with G-proteins. Frizzled-4 may be involved in transduction and intercellular transmission of polarity information during tissue morphogenesis and/or in differentiated tissues. Frizzled-4 also plays a critical role in retinal angiogenesis. Frizzled-4 is virtually ubiquitously expressed with greatest amounts found in adult heart, skeletal muscle, ovary, and fetal kidney.

REFERENCES

1. Robitaille, J., et al. 2002. Mutant frizzled-4 disrupts retinal angiogenesis in familial exudative vitreoretinopathy. *Nat. Genet.* 32: 326-330.
2. Omoto, S., et al. 2004. Autosomal dominant familial exudative vitreoretinopathy in two Japanese families with FZD4 mutations (H69Y and C181R). *Ophthalmic Genet.* 25: 81-90.
3. Swain, R.K., et al. 2005. *Xenopus* frizzled-4S, a splicing variant of Xfz4 is a context-dependent activator and inhibitor of Wnt/ β -catenin signaling. *Cell Commun. Signal.* 3: 12.
4. Qin, M., et al. 2005. Complexity of the genotype-phenotype correlation in familial exudative vitreoretinopathy with mutations in the LRP5 and/or FZD4 genes. *Hum. Mutat.* 26: 104-112.
5. MacDonald, M.L., et al. 2005. Genetic variants of frizzled-4 gene in familial exudative vitreoretinopathy and advanced retinopathy of prematurity. *Clin. Genet.* 67: 363-366.
6. Masckauchán, T.N., et al. 2005. Wnt/ β -catenin signaling induces proliferation, survival and interleukin-8 in human endothelial cells. *Angiogenesis* 8: 43-51.
7. Mikels, A.J. and Nusse, R. 2006. Purified Wnt5a protein activates or inhibits β -catenin-TCF signaling depending on receptor context. *PLoS Biol.* 4: e115.

CHROMOSOMAL LOCATION

Genetic locus: FZD4 (human) mapping to 11q14.2; Fzd4 (mouse) mapping to 7 E1.

SOURCE

frizzled-4 (3G7) is a mouse monoclonal antibody raised against a recombinant protein mapping within amino acids 107-206 representing partial length frizzled-4 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 50 μ g IgG_{2b} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

frizzled-4 (3G7) is recommended for detection of frizzled-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for frizzled-4 siRNA (h): sc-39983, frizzled-4 siRNA (m): sc-39984, frizzled-4 shRNA Plasmid (h): sc-39983-SH, frizzled-4 shRNA Plasmid (m): sc-39984-SH, frizzled-4 shRNA (h) Lentiviral Particles: sc-39983-V and frizzled-4 shRNA (m) Lentiviral Particles: sc-39984-V.

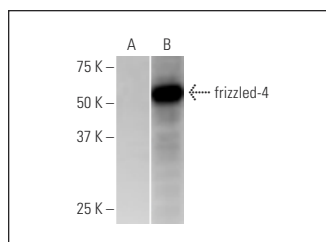
Molecular Weight of frizzled-4: 59 kDa.

Positive Controls: frizzled-4 transfected 293T whole cell lysate.

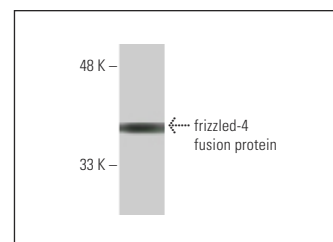
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



frizzled-4 (3G7): sc-293454. Western blot analysis of frizzled-4 expression in non-transfected (A) and frizzled-4 transfected (B) 293T whole cell lysates.



frizzled-4 (3G7): sc-293454. Western blot analysis of human recombinant frizzled-4 fusion protein.

STORAGE

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

PROTOCOLS

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