

DESCRIPTION

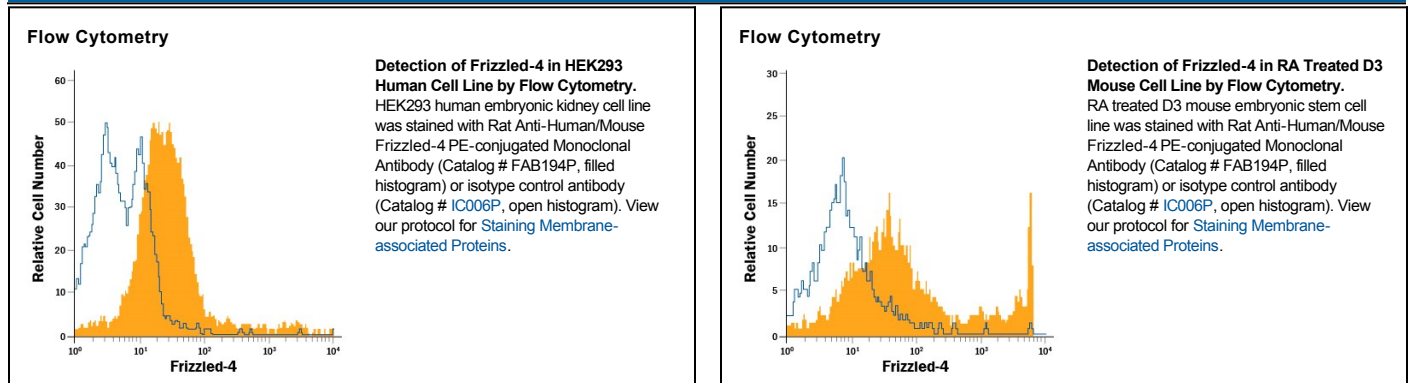
Species Reactivity	Human/Mouse
Specificity	Detects human and mouse Frizzled-4 in Western blots. In Western blots, no cross-reactivity with recombinant mouse (rm) Frizzled-1, -2, -3, -6, -7, -8, or recombinant human Frizzled-5 is observed. Detects Frizzled-4 by flow cytometry and immunohistochemistry on mouse differentiated embryoid bodies derived from the mouse embryonic cell line, D3.
Source	Monoclonal Rat IgG _{2A} Clone # 145901
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Frizzled-4 Phe37-Glu180 Accession # Q61088
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Frizzled-4, designated CD344, is a 7-transmembrane glycoprotein member of the Frizzled family that belongs to the G-protein coupled receptor superfamily (1, 2). Frizzled proteins function as receptors for Wnt proteins and can activate canonical Wnt/beta-catenin signaling as well as planar cell polarity and calcium flux pathways (1). Frizzled-4 is particularly important in angiogenic Wnt pathway signaling (1, 3). Frizzleds contain a divergent N-terminal signal peptide, a highly conserved ~120 amino acid (aa) cysteine-rich domain (CRD), a variable length linker region, seven transmembrane domains, and a variable-length C-terminal tail (1). The mouse Frizzled-4 cDNA encodes 537 aa with a 186 aa N-terminal extracellular region, and a 38 aa C-terminal cytoplasmic domain (4). The aa sequence expressed here spans aa 37-180, and shares 93%, 94%, 90%, 89% and 88% aa sequence identity with human, rat, equine, bovine and canine Frizzled-4, respectively. This portion competes for Wnt binding with endogenous receptors. In humans, a 122 aa soluble form that diverges at aa 95 is proposed to be a positive regulator of Wnt signaling pathways (3). Frizzled-4 is unusual in binding a non-Wnt ligand, Norrin, in addition to binding Wnt ligands (1, 5, 6). Norrin binds the Frizzled-4 CRD, activates Wnt signaling pathways and uses LRP5/6 as co-receptors (5, 6). Deletion of either Frizzled-4 or Norrin in mice results in a similar phenotype including malformation of vasculature in the retina, cerebellar degeneration, and loss of hair cells in the inner ear (1, 5, 7). In humans, blindness due to familial exudative vitreoretinopathy (FEVR) is associated with mutations producing loss of function of Frizzled-4 or Norrin, designated EVR1 and EVR2, respectively (1, 5, 8). Frizzled-4 expression has been found in many tissues, including mouse ovary, where it influences corpus luteum vasculogenesis and is necessary for fertility (4, 9).

References:

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3. Sagara, N. *et al.* (2001) *Biochem. Biophys. Res. Commun.* **282**:750.
4. Wang, Y. *et al.* (1996) *J. Biol. Chem.* **271**:4468.
5. Xu, Q. *et al.* (2004) *Cell* **116**:883.
6. Smallwood, P.M. *et al.* (2007) *J. Biol. Chem.* **282**:4057.
7. Wang, Y. *et al.* (2001) *J. Neurosci.* **21**:4761.
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9. Hsieh, M. *et al.* (2005) *Biol. Reprod.* **73**:1135.