

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse Frizzled-7. In direct ELISAs, no cross-reactivity with recombinant mouse Frizzled-1, -3, -4 or -8 is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 151143
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Frizzled-7 Gln33-Leu185 Accession # Q61090
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL 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	0.25-1 µg/10 ⁶ cells	Retinoic acid-treated D3 mouse embryonic stem cell line

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-7 is a member of the Frizzled family of unconventional G-protein-coupled glycoprotein receptors for the Wnt signaling pathway (1-3). The Wnt genes encode a large family of glycoproteins that are essential in development and tissue maintenance (1, 2). Like other Frizzled family members, Frizzled-7 contains a divergent N-terminal signal peptide (amino acid (aa) 1-32), a highly conserved extracellular cysteine-rich domain (CRD, aa 44-169), a variable-length linker region (aa 170-256), a seven-pass transmembrane region (aa 257-549), and a variable-length C-terminal cytoplasmic domain (aa 550-574) (1-3). The CRD, which comprises the binding site for Wnts and other ligands such as Syndecan 4 and fibronectin, spans about 130 amino acid residues and contains ten invariant cysteine residues (2, 3). Expressed alone, it can compete with native Frizzled to inhibit Wnt canonical signaling (4). Within aa 33-185, human Frizzled-7 shares ~99% aa identity with human, rat, canine and bovine Frizzled-7. Mature Frizzled-7 also shares 80% aa identity with Frizzled-1 and Frizzled-2. Roles for Frizzled-7 have been determined in both canonical Wnt/β-Catenin-mediated signaling and non-canonical planar cell polarity and calcium pathways (1, 2, 4). During development, Frizzled-7 is expressed during gastrulation and in the fetal gut, kidney and lung where it is thought to influence tissue morphogenesis via non-canonical signaling pathways (3-5). In the adult, Frizzled-7 is expressed in skeletal muscle, especially in satellite cells that mediate muscle regeneration in response to Wnt-7a (3, 6). It is expressed in embryonic stem cells (ES), contributing to self-renewal signaling (7). It has been implicated in mesenchymal-to-epithelial transition in colorectal cancer (2, 8). Frizzled-7 mRNA has also been detected in adult heart and placenta (3).

References:

1. Schulte, G. and V. Bryja (2007) *Trends Pharmacol. Sci.* **28**:518.
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4. Medina, A. *et al.* (2000) *Mech. Dev.* **92**:227.
5. Kemp, C.R. *et al.* (2007) *Dev. Dyn.* **236**:2011.
6. Le Grand, F. *et al.* (2009) *Cell Stem Cell* **4**:535.
7. Melchior, K. *et al.* (2008) *Biol. Chem.* **389**:897.
8. Vincan, E. *et al.* (2007) *Oncogene* **26**:2340.

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