

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human sFRP-1 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant mouse sFRP-2, recombinant human (rh) sFRP-3, and rh sFRP-4 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human sFRP-1 (R&D Systems, Catalog # 1384-SF) Ser32-Lys314 Accession # AAB70793
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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
Western Blot	0.1 µg/mL	Recombinant Human sFRP-1 (Histidine-tagged) (Catalog # 1384-SF)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month from date of receipt, 2 to 8 °C, reconstituted. 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

Secreted Frizzled Related Proteins (sFRPs) are a family of secreted, soluble vertebrate glycoproteins which contain homology to the Wnt-binding domain of the Frizzled (Fz) family of transmembrane receptors. sFRPs are approximately 30 - 35 kDa in size and are comprised of 3 domains: a signal sequence; an N-terminal Fz cysteine-rich domain (CRD) with 10 conserved cysteines; and a C-terminal heparin-binding region with weak homology to Netrin. The Fz CRD mediates Wnt-binding and is present in all Fz and sFRP family members (1).

sFRP-1, also known as secreted apoptosis-related protein 2 (SARP-2), FRP and FrzA, is expressed in the embryonic kidney, eye, brain, teeth, salivary gland and small intestine, most often at sites of epithelial-mesenchyme interaction (5). Expression in the adult animal is strong in the eye, kidney, and heart and also prevalent in the brain and lung (2, 5). sFRP-1 was first characterized as a protein that enhances the sensitivity of cells to apoptotic stimuli (3) and as an antagonist of Wnt signaling in *Xenopus* embryos (4). It is also characterized as a tumor suppressor in breast (6) and cervical carcinomas (7). In contrast, sFRP-1 is expressed by the majority of malignant gliomas (8) and contributes to the development of uterine leiomyomas (9), suggesting that the role of sFRP-1 is dependent on cell context. sFRP-1 has diverse activities, from inducing angiogenesis (10) in a variety of *in vivo* models to helping regulate Wnt-4 signaling (with sFRP-2) in renal organogenesis (11). Mouse and human sFRP-1 proteins share 94% amino acid identity (1).

References:

1. Jones, S. *et al.* (2002) *Bioessays* **24**:811.
2. Rattner, A. *et al.* (1997) *Proc. Natl. Acad. Sci. USA* **94**:2859.
3. Melkonyan, H. *et al.* (1997) *Proc. Natl. Acad. Sci. USA* **94**:13636.
4. Finch, P. *et al.* (1997) *Proc. Natl. Acad. Sci. USA* **94**:6770.
5. Leimeister, C. *et al.* (1998) *Mech. Dev.* **75**:29.
6. Ugolini, F. *et al.* (2001) *Oncogene* **20**:5810.
7. Ko, J. *et al.* (2002) *Exp. Cell. Res.* **280**:280.
8. Roth, W. *et al.* (2000) *Oncogene* **19**:4210.
9. Fukuhara, K. *et al.* (2002) *J. Clin. Endocr. Metab.* **87**:1729.
10. Dufourcq, P. *et al.* (2002) *Circulation* **106**: 3097.
11. Yoshino, K. *et al.* (2001) *Mech. Dev.* **102**:45.