

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Ala22-Val346, with a C-terminal 10-His tag Accession # ACC04617
N-terminal Sequence Analysis	Ala22
Structure / Form	Recombinant Human sFRP-4 is prone to proteolytic cleavage at C-terminus, therefore the poly-His tag at C-terminus may not be present in the preparation.
Predicted Molecular Mass	38.9 kDa

SPECIFICATIONS

SDS-PAGE	55 kDa, reducing conditions
Activity	Measured by its ability to inhibit Wnt-3a-induced alkaline phosphatase production by MC3T3-E1 mouse preosteoblast cells. The ED ₅₀ for this effect is 4-20 µg/mL, in the presence of 10 ng/mL of Recombinant Mouse Wnt-3a (Catalog # 1324-WN). Optimal dilutions should be determined by each laboratory for each application.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
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, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Secreted Frizzled Related Proteins (sFRPs) are a family of vertebrate proteins which contain homology to the ligand-binding domain of the Frizzled family of transmembrane receptors. sFRPs are approximately 30-35 kDa in size and are comprised of 3 domains: a signal sequence; a cysteine-rich domain (CRD) of about 110 amino acids (aa) with high degree of similarity to the Frizzled proteins, including 10 conserved cysteines; and a 175 aa conserved hydrophilic carboxy terminal region. Because sFRPs contain a CRD very similar to the region responsible for binding Wnt ligands in Frizzleds, sFRPs are thought to act as soluble antagonists of Wnt signals, often postulated to act as tumor suppressor genes (1).

sFRP-4, also known as DDC-4, FrpAP, frpHE and FrzB-2, is expressed in brain, kidney, lung, ovary, prostate, mammary gland, and endometrium (1, 2). This protein shows complex functions with respect to cell survival: it is up-regulated with apoptosis during ovulation (3), regulates apoptosis in chondrocytes (4), and promotes apoptosis in mammary glands when expressed in transgenic mice (5). On the other hand, sFRP-4 can also act to enhance growth as it is up-regulated in endometrial and breast carcinomas (6, 7). Since it is not detected in other carcinomas such as the ovary, colon, and pancreas, this suggest that its role in cancer is likely to be tissue dependent (6). In addition sFRP-4 is characterized as a circulating phosphaturic factor expressed by tumors associated with osteomalacia that antagonizes renal Wnt signaling (7). Of all the secreted frizzled related proteins, sFRP-4 is most closely related to sFRP-3 (1). Mouse and human sFRP-4 proteins share 92% aa identity.

References:

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6. Abu-Jawdeh, G. *et al.* (1999) *Lab Investigation* **79**:439.
7. Wong, S.C.C. *et al.* (2002) *J. Pathology* **196**:145.
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