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Recombinant Human SCF

Description: Stem Cell Factor (SCF), a 18,4 kDa protein consisting of 164 amino acid residues (Asp26-Ala189) and fused to a C-terminal His-tag (6x His), is a hematopoietic growth factor that exerts its activity at the early stages of hematopoiesis. SCF stimulates the proliferation of myeloid, erythroid, and lymphoid progenitors in bone marrow cultures and has been shown to act synergistically with colony stimulating factors.

This pleiotropic cytokine, alternately known as mast cell growth factor (MGF) and steel-factor (SLF), plays essential roles in gametogenesis, melanogenesis and early stages of hematopoiesis. In vitro and in vivo, SCF can stimulate the proliferation of mature, as well as the proliferation and maturation of immature, mast cells. On purified primitive human and mouse hematopoietic precursors, SCF acts in a synergistic manner with various growth factors, such as IL-1, IL-3, IL-6, IL-7, and Epo, to induce myeloid, erythroid and lymphoid lineage colony formation. The finding that SCF is also expressed in the nervous system suggests a possible role for SCF in the development of the nervous system. The cDNA sequences for human, mouse and rat SCF encode transmembrane proteins which are composed of a signal peptide, a 189 amino acid extracellular domain, a hydrophobic transmembrane domain and an intracellular domain. Native SCF can exist either as the membrane bound form or as a soluble form consisting of the first 164 or 165 amino acids of the extracellular domain. The soluble form is believed to be a proteolytic cleavage product of the transmembrane protein. Both the soluble and the transmembrane form of SCF have growth factor activities. Native soluble SCF is a heavily N- and O-glycosylated protein which exists as a non-covalently associated dimer in solution. All four cysteine residues of SCF monomers are involved in intramolecular disulfide bonds. Murine or rat soluble SCF is highly homologous to human soluble SCF (approximately 80%). Whereas both rat and mouse SCF are active on human cells, the human protein is much less active on mouse or rat cells.

Source:	Insect cells
Molecular Weight:	20-23 kDa
Purity:	95% by SDS-PAGE and visualised by silverstain
Endotoxin level:	< 0.1 ng per ug of SCF
Stabilizer:	none
Buffer:	PBS, pH 7.4
Formulation:	lyophilized

Biological Activity: The ED₅₀ as determined by the dose-dependent stimulation of the proliferation of human TF-1 cells is typically ≤ 2 ng/ml, corresponding to a specific activity of $\geq 5 \times 10^5$ units/mg.

Reconstitution: We recommend a quick spin followed by reconstitution in 10 mM acetic acid to a concentration of 0.1-1.0 mg/ml. This solution can be then diluted into other aqueous buffers and stored at 4°C for 1 week or at -20°C for future use.

Stability: The lyophilized human SCF, though stable at room temperature, is best stored desiccated below 0°C. Reconstituted human SCF should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles.**

Usage: Human SCF is offered for research use. Not for drug use. **Not for human use.**

Catalogue number:	400-014-SC	Size:	50 µg
		Range:	0.2-20.0 ng/ml

****please note: always centrifuge product before opening vial****