Recombinant Human SCF Protein

Product Name

Recombinant Human SCF Protein

Size / Catalog Number

10μg / TL504-0010

Product Information

Synonyms: C-kit ligand, Mast cell growth factor (MGF), Stem cell factor

Accession: UniProt P21583-1

Expressed Region: Glu26-Ala189

Tag: C-terminal 6×His-tag

Expression system: HEK293 cells

Predicted Molecular weight: 19.3 kDa

Purity: > 90% as determined by SDS-PAGE

Endotoxin: < 0.1 EU per 1 μg of protein (LAL method)

Activity: Measured in a cell proliferation assay using Mo7e cells, corresponding to a specific activity of ≥ 2.0×10^5 IU/mg.

Form: Lyophilized from sterile PBS (pH7.4), typically supplemented with 6% mannitol as a protectant.

Background

Recombinant Human Stem Cell Factor (SCF) is a multifunctional cytokine produced by fibroblasts and endothelial cells that binds the c-Kit receptor, existing in soluble (~18.5 kDa dimer) and transmembrane forms via alternative splicing. During development, it regulates hematopoiesis (fetal liver/bone marrow), germ cell/neural development, and melanocyte localization; in adulthood, it maintains hematopoietic stem cell (HSC) homeostasis by governing survival, proliferation, differentiation, and mobilization within the bone marrow niche, while also stimulating mast cell growth. In vitro, SCF potently synergizes with cytokines like G-CSF, GM-CSF, and IL-3 to stimulate hematopoietic progenitor proliferation and differentiation; in vivo, combined with G-CSF, it clinically enhances peripheral blood $CD34^+$ cell yields by 2-3 fold versus G-CSF alone. This product is GMP manufactured in mammalian cells with strict control of residuals (host protein, nucleic acid) and pathogens, ensuring full traceability.

Stability & Storage

Lyophilized powder: Stable for 12 months at -80°C or 6 months at -20°C when stored in the original sealed container under desiccant.

Reconstitution: Dissolve contents in 200 μL sterile water for injection, 0.9% NaCl, or PBS (pH7.4), maintaining a final concentration about 50 μg/mL.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Geissler EN, Liao M, Brook JD, *et al*. Stem cell factor (SCF), a novel hematopoietic growth factor and ligand for c-kit tyrosine kinase receptor, maps on human chromosome 12 between 12q14.3 and 12qter. Somat Cell Mol Genet. 1991 Mar;17(2):207-14.

2. Flanagan JG, Chan DC, Leder P. Transmembrane form of the kit ligand growth factor is determined by alternative splicing and is missing in the Sld mutant. Cell. 1991 Mar 8;64(5):1025-35.
3. Anderson DM, Williams DE, Tushinski R, *et al*. Alternate splicing of mRNAs encoding human mast cell growth factor and localization of the gene to chromosome 12q22-q24. Cell Growth Differ. 1991 Aug;2(8):373-8.
4. Qiu X, Ping S, Kyle M, *et al*. Stem Cell Factor and Granulocyte Colony-Stimulating Factor Promote Remyelination in the Chronic Phase of Severe Traumatic Brain Injury. Cells. 2023 Feb 23;12(5):705.

Intended Us

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