

Cell-Vive™ GMP Recombinant Human SCF (carrier-free)

Catalog# / Size	573914 / 25 µg 573916 / 100 µg
Other Names	Stem cell factor, KIT-ligand, Kitl, KL-1, mast cell grow factor (MGF), steel factor (SF), FPH2, SHEP7
Description	<p>Stem Cell Factor (SCF) is initially synthesized as membrane-bound forms of 248 or 220 amino acids, depending on alternative splicing of exon 6. The 248 amino acid form contains a proteolytic cleavage site encoded by exon 6, and it is cleaved from the cell to release an active soluble protein of 165 amino acid residues. Soluble SCF is glycosylated at both N-linked and O-linked sites. MMP-9 plays a physiological role in SCF release from the membrane, and this action plays a significant role in differentiating and mobilizing stem and progenitor cells from the bone marrow. SCF increases the proliferation of myeloid and lymphoid hematopoietic progenitors in bone marrow cultures. SCF/c-kit interaction in mast cells results in mast cell degranulation with release of mediators, such as histamine and inflammatory cytokines and chemokines. Also, activation of c-kit in dendritic cells regulates T helper cell differentiation and allergic asthma. In addition, SCF plays an important role in revascularization of ischemic limbs. Ischemia induces plasma elevation of SCF and thrombopoietin (TPO) and, in lower levels, GM-CSF and erythropoietin (EPO). SCF and TPO induce the release of CXCL12 from platelets, thereby increasing CXCL12 levels in plasma. This results in an extensive mobilization of CXCR4+VEGFR1+ cells (hemangiocytes), accelerating revascularization of the ischemic limbs. SCF binds to its receptor kit that belongs to the type III tyrosine kinase family, whose members include receptors for M-CSF and PDGF.</p>
Quality Statement	<p>BioLegend Cell-Vive™ GMP Recombinant proteins are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12 in a dedicated GMP facility compliant with ISO 13485:2016. Specifications and processes include:</p> <ul style="list-style-type: none">• Low endotoxin level (≤ 0.1 EU/µg)• Purity ($\geq 95\%$ or higher)• Bioburden testing• Mycoplasma testing• Batch-to-batch consistency• Vendor qualification• Raw material traceability and documentation• Documented procedures and employee training• Equipment maintenance and monitoring records• Lot-specific certificates of analysis• Quality audits per ISO 13485:2016• QA review of released products

Product Details

Source	Human SCF, amino acids Glu26-Ala189 (Accession# NM_000899.4) was expressed in <i>E. coli</i> .
Molecular Mass	The 165 amino acid recombinant protein has a predicted molecular mass of approximately 18.6 kD. The DTT-reduced and non-reduced protein migrate at approximately 20 kD and 18 kD respectively by SDS-PAGE. The N-terminal amino acid is Met.
N-terminal Sequence Analysis	Met-Glu-Gly-Ile-(Cys)-Arg-Asn-Arg-Val-Thr
Purity	$\geq 95\%$, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in PBS.
Endotoxin Level	Less than or equal to 0.1 EU per µg protein as determined by the LAL method
Residual Host Cell Protein Content	≤ 0.500 ng/µg by ELISA
Concentration	500 µg/mL

Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% endotoxin-free BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week or stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	ED ₅₀ = 3 - 12 ng/mL as determined by its ability to induce proliferation of TF-1 human erythroleukemic cells. Deep Blue Cell Viability™ Kit (Cat. No. 424701) is used to measure the proliferation.
Application	Biossay Cell Culture
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are validated in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .
Disclaimer	BioLegend Cell-Vive™ GMP Recombinant proteins are for research use only. Suitable for <i>ex vivo</i> cell processing. Not for injection or diagnostic or therapeutic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

Antigen Details

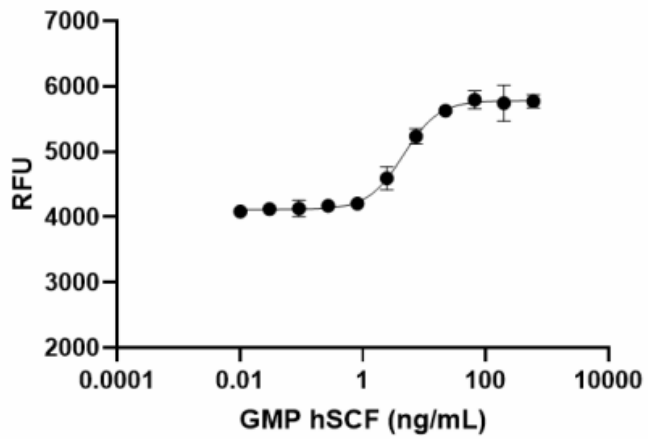
Structure	Homodimer
Distribution	Embryonic Stem Cells, Hematopoietic stem and progenitors
Function	Plays an essential role in the regulation of cell survival and proliferation, hematopoiesis, stem cell maintenance, gametogenesis, mast cell development, migration and function, and in melanogenesis.
Interaction	Mast cells, natural killer cells, dendritic cells, eosinophils, epithelial cells, endothelial cells, melanocytes, germ cells, cholangiocytes, platelets, myeloid leukemia cells, and intestinal cells of Cajal
Ligand/Receptor	c-kit (CD117)
Bioactivity	Measured by its ability to induce proliferation of TF-1 human erythroleukemic cells
Cell Type	Embryonic Stem Cells, Hematopoietic stem and progenitors
Biology Area	Angiogenesis, Cell Biology, Immunology, Signal Transduction, Stem Cells
Molecular Family	Cytokines/Chemokines, Growth Factors

Antigen References

1. Lu HS, *et al.* 1996. *J. Biol. Chem.* 271:11309.
2. Heissig B, *et al.* 2002. *Cell* 109:625.
3. Jin DK, *et al.* 2006. *Nat. Med.* 12:557.
4. Krishnamoorthy N, *et al.* 2008. *Nat. Med.* 14:565.
5. Ray P, *et al.* 2010. *Ann. N. Y. Acad. Sci.* 1183:104.

Gene ID [4254](#)

Product Data



GMP recombinant human SCF induces proliferation of TF-1 human erythroleukemic cells in a dose-dependent manner with an ED₅₀ range of 3 - 12 ng/mL.

For Research Use Only. Suitable for *ex vivo* cell processing. Not for injection or diagnostic or therapeutic use.

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