

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 progenitors 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>

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.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE
Formulation	0.1 µm filtered protein solution is in PBS.
Endotoxin Level	Less than 0.1 EU per µg protein as determined by the LAL method
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	GMP Recombinant Proteins. BioLegend GMP recombinant proteins are

manufactured in a dedicated GMP facility and compliant with ISO 13485:2016. For research or *ex vivo* cell processing use. Not for use in diagnostic or therapeutic procedures. Our processes include:

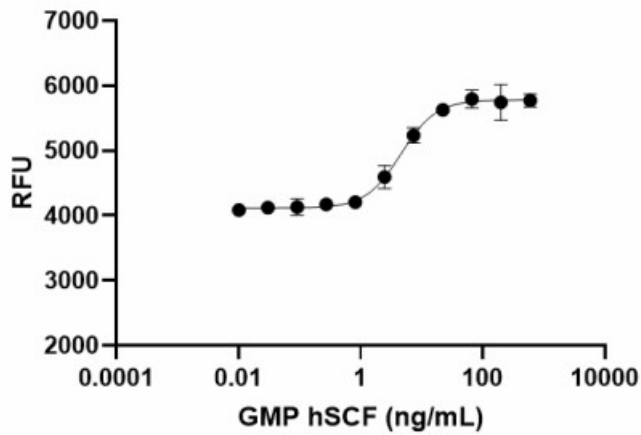
- Batch-to-batch consistency
- Material traceability
- Documented procedures
- Documented employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of released products

BioLegend 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.

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	<ol style="list-style-type: none">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.

Symbols Glossary*

Symbol	Meaning	Symbol Title	Symbol No.	Symbol	Meaning	Symbol Title	Symbol No.
	Catalog number	Catalogue number	5.1.6		Indicates the need for the user to consult the instructions for use.	Consult instructions for use	5.4.3
	Indicates the temperature limits to which the medical device can be safely exposed.	Temperature limit	5.3.7		Indicates a medical device that needs protection from light sources.	Keep away from sunlight	5.3.2
	Indicates the upper limit of temperature to which the medical device can be safely exposed.	Upper limit of temperature	5.3.6		Indicates the date after which the medical device is not to be used.	Use-by date	5.1.4
	Indicates the medical device manufacturer.	Manufacturer	5.1.1		Indicates the authorized representative in the European Community.	Authorized representative in the European Community	5.1.2
	Indicates the manufacturer's batch code so that the batch or lot can be identified.	Batch code	5.1.5		Indicates a medical device that is intended to be used as an in vitro diagnostic medical device.	<i>In vitro</i> diagnostic medical device	5.5.1

* Symbol information is from EN ISO 15223-1:2016 Medical devices – Symbols to be used with medical device labels, labelling and information to be supplied – Part 1: General requirements

For research and *ex vivo* cell processing use. Not for diagnostic or therapeutic procedures. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/terms). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to reverse engineer functionally similar materials without written approval of BioLegend. By use of these products you accept the terms and conditions of any and all applicable [Limited Use Label Licenses](#). Unless otherwise indicated, these products are for research and *ex vivo* cell processing use only and not intended for human or animal diagnostic or therapeutic use.

8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587