

## Recombinant Human SCF (carrier-free)

**Catalog# / Size** 573908 / 500 µg  
573902 / 10 µg  
573904 / 25 µg  
573906 / 100 µg

**Regulatory Status** RUO

**Other Names** Stem cell factor, KIT-ligand, Kitl, KL-1, mast cell grow factor (MGF), steel factor (SF), FPH2, SHEP7

**Description** 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.

### Product Details

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**Source** Human SCF, amino acids Glu26-Ala189 (Accession# NM\_000899.4) was expressed in *E. coli*.

**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** 0.22 µm filtered protein solution is in PBS.

**Endotoxin Level** Less than 0.01 ng per µg cytokine as determined by the LAL method.

**Concentration** 10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our [Concentration and Expiration Lookup](#) or [Certificate of Analysis](#) online tools.

**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% 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 and stored at -20°C or colder for up to 3 months. **Avoid repeated freeze/thaw cycles.**

**Activity** ED<sub>50</sub> = 3 - 12 ng/ml, corresponding to a specific activity of 0.8 - 3.3 x 10<sup>5</sup> units/mg, as determined by TF-1 cell proliferation induced in a dose dependent manner.

The specific activity of recombinant human SCF is approximately 1.13 x 10<sup>3</sup> IU/µg when compared against the WHO Reference Reagent for Human SCF (NIBSC code: 91/682) as determined by the dose dependent stimulation of TF-1 cell proliferation.

For more information on specific activity, please visit the [Recombinant Protein Unit Conversions page](#).

**Application** [Bioassay](#)

## 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 verified 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](mailto:tech@biolegend.com).

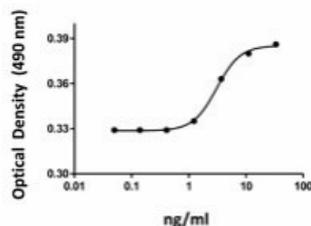
## Antigen Details

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<b>Structure</b>	Homodimer
<b>Interaction</b>	Mast cells, natural killer cells, dendritic cells, eosinophils, epithelial cells, endothelial cells, melanocytes, germ cells, cholangiocytes, platelets, myeloid leukaemia cells, and intestinal cells of Cajal.
<b>Ligand/Receptor</b>	c-kit (CD117)
<b>Cell Type</b>	Embryonic Stem Cells, Hematopoietic stem and progenitors
<b>Biology Area</b>	Angiogenesis, Cell Biology, Immunology, Signal Transduction, Stem Cells
<b>Molecular Family</b>	Cytokines/Chemokines, Growth Factors
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Lu HS, <i>et al.</i> 1996. <i>J. Biol. Chem.</i> 271:11309.</li><li>2. Heissig B, <i>et al.</i> 2002. <i>Cell</i> 109:625.</li><li>3. Jin DK, <i>et al.</i> 2006. <i>Nat. Med.</i> 12:557.</li><li>4. Krishnamoorthy N, <i>et al.</i> 2008. <i>Nat. Med.</i> 14:565.</li><li>5. Ray P, <i>et al.</i> 2010. <i>Ann. N. Y. Acad. Sci.</i> 1183:104.</li></ol>
<b>Gene ID</b>	<a href="#">4254</a>

## Product Data

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TF-1 cell proliferation induced by human SCF.

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