

Mouse Recombinant SCF (E. coli-expressed)

Stem cell factor

Catalog #78064.1	10 µg
Catalog #78064	100 µg
Catalog #78064.3	500 µg
Catalog #78064.2	1000 µg

Product Description

Stem cell factor (SCF) is an early-acting cytokine that plays a pivotal role in the regulation of embryonic and adult hematopoiesis. SCF promotes cell survival, proliferation, differentiation, adhesion, and functional activation of cells at multiple levels of the hematopoietic hierarchy. Together with other cytokines such as thrombopoietin and Flt3/Flk-2 Ligand, SCF is commonly used to promote expansion of primitive hematopoietic stem cells and multi-potent progenitor cells in culture (Huang et al.; Kent et al.). In synergy with various growth factors, including IL-2, IL-3, IL-6, IL-7, G-CSF, and erythropoietin, SCF increases proliferation and differentiation of myeloid and erythroid progenitor cells and a subset of lymphoid progenitor cells (Broudy). In the mouse, SCF is essential during fetal gonadal development (Mauduit). It is produced by stromal cells in the fetal liver, bone marrow, and thymus, in keratinocytes, and in the central nervous system and gut mucosa, and can function as a chemotactic and chemokinetic factor.

SCF exists in two biologically active splice forms: a soluble and a transmembrane isoform. Upon binding to its receptor (c-Kit tyrosine kinase receptor; CD117), it activates PI3K, JAK/STAT, and MAPK pathways. SCF and signaling from c-Kit has also been reported to play an important role in pigmentation, fertility, vasculogenesis, motility of the gut via c-Kit-positive interstitial cells of Cajal, and in the migration of neuronal stem and progenitor cells to sites of injury in the brain (Lennartsson & Ronnstrand).

Product Information

Alternative Names:	Kit ligand, Mast cell growth factor, Steel factor, Stem cell factor
Accession Number:	P20826
Amino Acid Sequence:	MKEICGNPVT DNVKDITKLV ANLPNDYMIT LNYVAGMDVL PSHCWLRDMV IQLSLSLTTL LDKFSNISEG LSNYSIIDKL GKIVDDLVL C MEENAPKNIK ESPKRPETRS FTPEEFSIF NRSIDAFKDF MVASDTSDCV LSSTLGPEKD SRVSVTKPFM LPPVA
Predicted Molecular Mass:	18.4 kDa
Species:	Mouse
Product Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 6.5.
Source:	E. coli
Purity:	≥ 95%

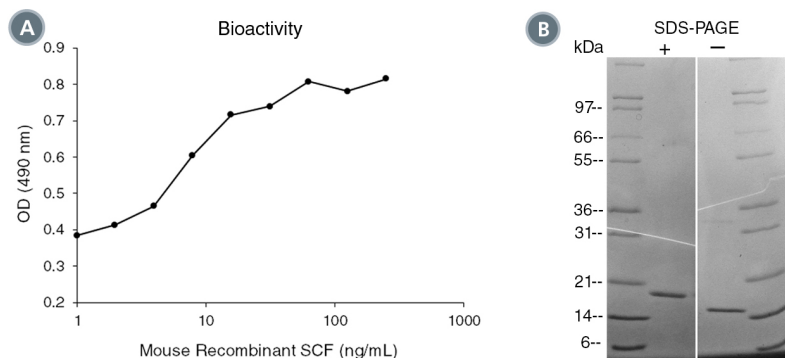
Specifications

Activity:	The specific activity is $\geq 5 \times 10^4$ units/mg ($EC_{50} \leq 20$ ng/mL), as determined by a cell proliferation assay using TF-1 cells.
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g protein.

Preparation and Storage

Stability and Storage:	Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -20 to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse Recombinant SCF was tested by its ability to promote the proliferation of TF-1 cells. Cell proliferation was measured after 65 hours of culture. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 5.7 - 8.6 ng/mL. (B) 1 µg of Mouse Recombinant SCF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant SCF has a predicted molecular mass of 18.4 kDa.

Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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- Huang E et al. (1990) The hematopoietic growth factor KL is encoded by the Sl locus and is the ligand of the c-kit receptor, the gene product of the W locus. *Cell* 63(1): 225-33.
- Kent D et al. (2008) Regulation of hematopoietic stem cells by the steel factor/KIT signaling pathway. *Clin Cancer Res* 14(7): 1926-30.
- Lennartsson J & Ronnstrand L. (2012) Stem cell factor receptor/c-Kit: from basic science to clinical implications. *Physiol Rev* 92(4): 1619-49.
- Mauduit C. (1999) Stem cell factor/c-kit system in spermatogenesis. *Hum Reprod Update* 5(5): 535-45.

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