

Cytokines

Mouse Recombinant SCF



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Stem cell factor

Catalog #	78064.1	10 µg
	78064	100 µg
	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 the central nervous system, in keratinocytes, and in the 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 GKIVDDL VLC MEENAPKNIK ESPKRPETRS FTPEEFSIF NRSIDAFKDF MVASDTSDCV LSSTLGPEKD SRVSVTKPFM LPPVA
Predicted Molecular Mass:	18.4 kDa
Species:	Mouse
Cross Reactivity:	Human
Formulation:	Lyophilized from a sterile filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

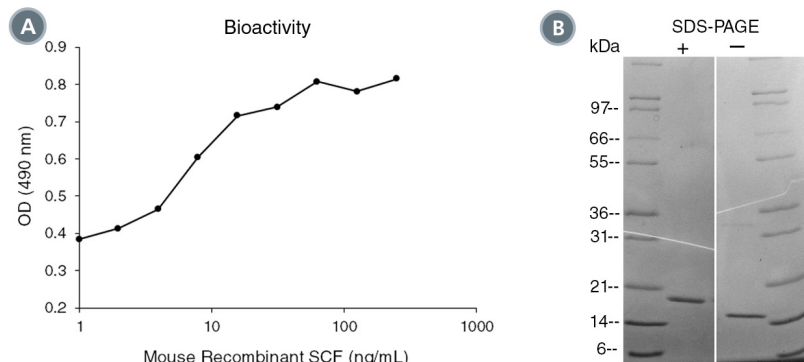
Specifications

Activity:	The specific activity is $\geq 5 \times 10^4$ units/mg ($EC_{50} \leq 0.02$ µg/mL) as determined by a cell proliferation assay using TF-1 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Reconstitution:	Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately BSA is not required.

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 using a fluorometric assay method. 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, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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- Mauduit C. (1999) Stem cell factor/c-kit system in spermatogenesis. *Hum Reprod Update* 5(5): 535–545.

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