



Recombinant Mouse Stem Cell Factor (SCF)

20200122BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	M30-010
Size:	10 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	<i>Kitlg</i>
Synonyms:	Hematopoietic growth factor KL, c-Kit ligand

Stem cell factor (SCF), also known as ckit ligand (KL), mast cell growth factor (MGF), and steel factor (SLF), is a widely expressed 28-40 kDa type I transmembrane glycoprotein (1). It promotes the survival, differentiation, and mobilization of multiple cell types including myeloid, erythroid, megakaryocytic, lymphoid, germ cell, and melanocyte progenitors (1-7). SCF is a primary growth and activation factor for mast cells and eosinophils (8). Mature mouse SCF consists of a 189 amino acid (aa) extracellular domain (ECD), a 23 aa transmembrane segment, and a 36 aa cytoplasmic tail (9). The ECD shows both N-linked and O-linked glycosylation (10). Proteolytic cleavage at two alternate sites in the extracellular juxtamembrane region releases a 25 kDa soluble molecule which is comparable to the only form produced by Steel-dickie mutant mice (11, 12). An alternately spliced isoform of mouse SCF lacks 28 aa that encompasses the primary proteolytic recognition site (13). Within the ECD of the short isoform (corresponding to this recombinant protein), mouse SCF shares 93% aa sequence identity with rat SCF and 72% 75% with canine, feline, and human SCF. Rat SCF is active on mouse and human cells, but human SCF is only weakly active on mouse cells (14). Noncovalent dimers of transmembrane or soluble SCF interact with the receptor tyrosine kinase SCF R/ckit to trigger receptor dimerization and signaling (15). SCF assists in the recovery of cardiac function following myocardial infarction by increasing the number of cardiomyocytes and vascular channels (16).

References

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3. Yoshida et al, J Invest Dermatol Symp Proc 6 (2001);
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6. Wang et al, Arterioscler Thromb Vasc Biol 27 (2007);
7. Bashamboo et al, J Cell Sci 119 (2006);
8. Reber et al, Eur J Pharmacol 533 (2006);
9. Huang et al, Cell 63 (1990);
10. Arakawa et al, J Biol Chem 266 (1991);
11. Majumdar et al, J Biol Chem 269 (1994);
12. Brannan et al, Proc Natl Acad Sci (1991);
13. Flanagan et al, Cell 64 (1991);
14. Martin et al, Cell 63 (1990);
15. Lemmon et al, J Biol Chem 272 (1997);
16. Kanellakis et al, Cardiovasc Res 70 (2006);

Sequence

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MKEICGNPVTDNVKDITKLVANLFPNDYMITLNYVAGMDVLPSCWLRDMVIQ  
LSLSLTTLDDKFSNISEGLSNYSIIDKLGKIVDDLVLCEENAPKNIKESPK  
RPETRSFTPEEFFSIFNRSIDAFKDFMVASDTSDCVLSSTLGPKEKDSRVSVT  
KPFMLPPVA
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Database References

Protein RefSeq:	NP_038626.1
Uniprot ID:	P20829
mRNA RefSeq:	NM_013598.2

Product Specifications

Expressed in	E.coli
Purity	> 95% by SDS-PAGE & silver stain
Buffer	0.5X PBS
Endotoxin	< 0.1ng/µg of mSCF
Stabilizer	None
Formulation	lyophilized
Length (aa):	165
MW:	18.42 kDa
Result by N-terminal sequencing	UNDER WORK!

Stability: The lyophilized mouse SCF is best stored desiccated below 0°C. Freeze/thaw cycles will result in significant loss of activity.

Reconstitution: Mouse SCF should be reconstituted in 50mM acetic acid or water to a concentration of 0.1 mg/ml. This solution can be diluted in water or other buffer solutions or stored at -20°C.



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The ED₅₀ as determined by the dose-dependent stimulation of the proliferation of the human TF-1 cell line is in the range of 2-10 ng/ml.



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Handling/Application

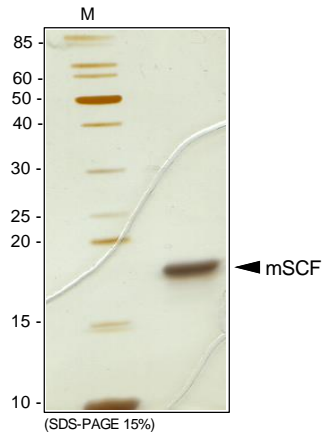


Fig. 1: SDS-PAGE analysis of recombinant mouse SCF. Sample was loaded in 15% SDS-polyacrylamide gel under reducing condition and stained with Silver stain.

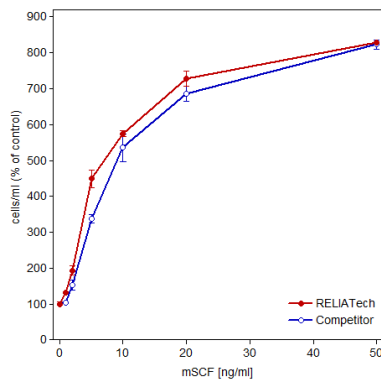


Fig. 2: Proliferation assay with TF-1 cells.