

Recombinant Mouse SCF, Tag Free

Information

Accession #	P20826
Alternate Names	Mast cell growth factor; MGF; MGFSHEP7; SCF;c-kit Ligand; DCUA; DFNA69; Kitl; KITLG
Source	Human embryonic kidney cell, HEK293-derived mouse SCF/c-kit Ligand protein
Protein sequence	Lys26-Ala189
M.Wt	18.3 kDa
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. - 12 months from date of receipt, -20 to -70°C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	The EC50 for this effect is 0.5-3 ng/mL. Measured in a cell proliferation assay using TF-1 human erythroleukemic cells
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

Stem cell factor (SCF), also known as c-kit 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/c-kit 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].

Reference

- [1]. Ashman, L.K. (1999) Int. J. Biochem. Cell Biol. 31:1037.
- [2]. Sette, C. et al. (2000) Int. J. Dev. Biol. 44:599.
- [3]. Yoshida, H. et al. (2001) J. Invest. Dermatol. Symp. Proc. 6:1.
- [4]. Erlandsson, A. et al. (2004) Exp. Cell Res. 301:201.
- [5]. Kapur, R. et al. (2002) Blood 100:1287.
- [6]. Wang, C.-H. et al. (2007) Arterioscler. Thromb. Vasc. Biol. 27:540.
- [7]. Bashamboo, A. et al. (2006) J. Cell Sci. 119:3039.
- [8]. Reber, L. et al. (2006) Eur. J. Pharmacol. 533:327.
- [9]. Huang, E. et al. (1990) Cell 63:225.
- [10]. Arakawa, T. et al. (1991) J. Biol. Chem. 266:18942.
- [11]. Majumdar, M.K. et al. (1994) J. Biol. Chem. 269:1237.
- [12]. Brannan, C.I. et al. (1991) Proc. Natl. Acad. Sci. 88:4671.
- [13]. Flanagan, J.G. et al. (1991) Cell 64:1025.
- [14]. Martin, F.H. et al. (1990) Cell 63:203.
- [15]. Lemmon, M.A. et al. (1997) J. Biol. Chem. 272:6311.
- [16]. Kanellakis, P. et al. (2006) Cardiovasc. Res. 70:117.

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www.apexbt.com

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com