

Recombinant Human SCF

Information

Accession #	P21583
Alternate Names	c-kit Ligand; DCUA; DFNA69; FPH2; FPHH; KIT ligand; Kitl; KITLG; KL-1; MGF; MGFSHEP7; SCF
Source	Human embryonic kidney cell, HEK293-derived human SCF protein
Protein sequence	Glu26-Ala189
M.Wt	18.5 kDa
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 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	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The EC50 for this effect is 0.1-3 ng/mL
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) is a potent hematopoietic growth factor required in regulating both embryonic and adult hematopoiesis. SCF protein 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]. And SCF assists in the recovery of cardiac function following myocardial infarction by increasing the number of cardiomyocytes and vascular channels ^[9]. Stem cell factor is an important cytokine for ex vivo clinical applications. Along with other cytokines, SCF is used in the culture and expansion of hematopoietic stem cells (HSCs) as well as for proliferation and differentiation of both myeloid and erythroid progenitor cells. Mature stem cell factor consists of a 189 amino

acid (aa) extracellular domain (ECD), a 23 aa transmembrane domain, and a 36 aa cytoplasmic tail ^[10]. The ECD shows both N linked and O-linked glycosylation ^[11]. SCF protein exists in two forms, a membrane-bound form and a proteolytically processed soluble form that lacks the transmembrane domain and cytoplasmic tail. The soluble form is created by proteolytic cleavage at two alternate sites in the extracellular juxtamembrane region releasing a 25 kDa soluble SCF protein which is comparable to the only form produced by Steel-dickie mutant mice ^[12, 13]. There is also an alternately spliced isoform of human SCF that lacks 28 amino acids that encompasses the primary proteolytic recognition site ^[14].

Reference

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