

PRODUCT INFORMATION



SCF Extracellular Domain (human, recombinant)

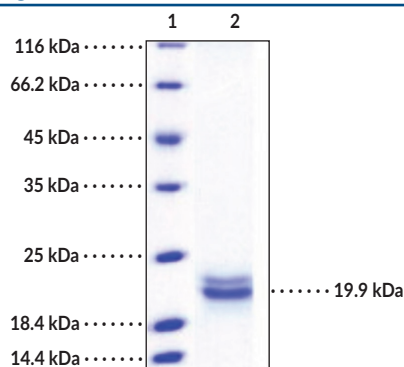
Item No. 32051

Overview and Properties

Synonyms:	Kit Ligand, c-Kit Ligand, Mast Cell Growth Factor, MGF, Steel Factor, Stem Cell Factor
Source:	Active recombinant human C-terminal His-tagged SCF extracellular domain expressed in insect cells
Amino Acids:	26-189
Uniprot No.:	P21583-1
Molecular Weight:	19.9 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥92% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, 500 mM sodium chloride, pH 8.0
Endotoxin Testing:	<1.0 EU/μg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

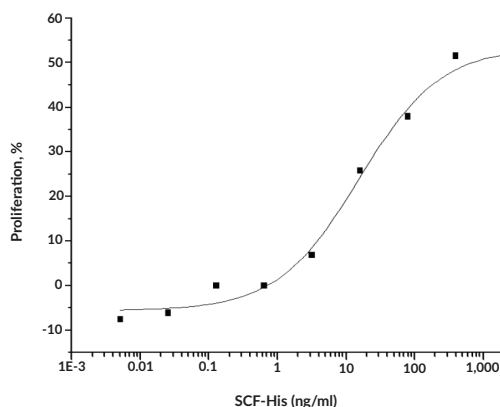
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: SCF Extracellular Domain

SDS-PAGE Analysis of SCF Extracellular Domain. This protein has a calculated molecular weight of 19.9 kDa.



SCF Extracellular Domain activity in cell proliferation assay. SCF Extracellular Domain is measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The ED_{50} value for this effect is 2-8 ng/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Stem cell factor (SCF), also known as steel factor or c-Kit ligand, is a growth factor and cytokine that promotes proliferation, migration, survival, and differentiation of hematopoietic progenitors, germ cells, and melanocytes and is encoded by *KITLG* in humans.¹ It is composed of an extracellular domain that contains a c-Kit binding region, a transmembrane domain, and a C-terminal intracellular tail and is ubiquitously expressed by fibroblasts and endothelial cells. SCF also exists as a soluble form produced by proteolytic cleavage of a membrane-bound isoform of SCF produced by alternative splicing and lacking exon 6. Both membrane-bound and soluble SCF homodimerize and bind to the SCF receptor, also known as c-Kit, to induce intracellular signaling. Allergen exposure increases lung and serum levels of SCF in a mouse model of allergic inflammation, and airway levels of SCF are increased in patients with asthma.² Exogenous administration of SCF decreases infarct size and improves motor function in a spontaneously hypertensive rat model of stroke induced by middle cerebral artery occlusion.³ SCF inhibits apoptosis of CD34⁺ acute myeloid leukemia cells induced by cytarabine (Item No. 16069), daunorubicin (Item No. 14159), or carboplatin (Item No. 13112).⁴ Cayman's SCF Extracellular Domain (human, recombinant) protein can be used for cell-based assay applications. This protein consists of 175 amino acids, has a calculated molecular weight of 19.9 kDa, and a predicted N-terminus of Glu26 after signal peptide cleavage.

References

1. Lennartsson, J. and Rönstrand, L. Stem cell factor receptor/c-Kit: From basic science to clinical implications. *Physiol. Rev.* **92**(4), 1619-1649 (2012).
2. Silva, C.A.D., Reber, L., and Frossard, N. Stem cell factor expression, mast cells and inflammation in asthma. *Fundam. Clin. Pharmacol.* **20**(1), 21-39 (2006).
3. Zhao, L.R., Piao, C.S., Murkinati, S.R., *et al.* The role of stem cell factor and granulocyte-colony stimulating factor in treatment of stroke. *Recent Pat. CNS Drug Discov.* **8**(1), 2-12 (2013).
4. Hassan, H.T. and Zander, A. Stem cell factor as a survival and growth factor in human normal and malignant hematopoiesis. *Acta Haematol.* **95**(3-4), 257-262 (1996).

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