

SCF

Stem Cell Factor

mouse, recombinant, *E. coli*

Cat. No.	Amount
PR-683	10 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -20°C

Avoid freeze / thaw cycles

Form

Lyophilized. SCF was lyophilized from 10 mM sodium phosphate buffer pH 6.5.

Solubility

It is recommended to reconstitute the lyophilized SCF in sterile bidest H₂O not less than 100 µg/ml. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Activity

The ED₅₀ as determined by the dose-dependant stimulation of Human TF-1 cell line is < 10 ng/ml, corresponding to a Specific Activity of 1x10⁵ IU/mg.

Molecular Weight

18.3 kDa

Purity

≥ 95% by SDS-PAGE and RP-HPLC

Description

Stem Cell Factor (SCF) plays an important role in hematopoiesis and the survival, proliferation, and differentiation of mast cells, melanocytes, and germ cells. SCF mediates its biological effects by binding to and activating a receptor tyrosine kinase designated c-kit or SCF receptor (SCFR).

SCF is also known as mast cell growth factor (MCGF), steel (*Sl*) factor (SLF), or kit ligand (KL).

Recombinant mouse SCF produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 164 amino acids and having a molecular mass of 18.3 kDa.

The SCF is purified by proprietary chromatographic techniques.

Amino acid sequence

MKEICGNPVT DNVKDITKLV ANLPNDYMIT LNY-
VAGMDVL PSHCWLRDMV IQLSLSLITL LDKFSNISEG
LSNYSIIDKL GKIVDDLVC MEENAPKNIK ESPKRPETRS
FTPEEFSIF NRSIDAFKDF MVASDTSDCV LSSTLGPEKD
SRVSVTKPFM LPPVA

Selected References:

- Ferret-Bernard *et al.* (2004) *In vitro* induction of inhibitory macrophage differentiation by granulocyte-macrophage colonystimulating factor, stem cell factor and interferon-gamma from lineage phenotypes-negative c-kit-positive murine hematopoietic progenitor cells. *Immunol. Lett.* **91**:221.
- Sykes *et al.* (2004) E2a/Pbx1 induces the rapid proliferation of stem cell factor-dependent murine pro-T cells that cause acute T-lymphoid or myeloid leukemias in mice. *Mol. Cell. Biol.* **24**:1256.
- Hartung *et al.* (2003) Enhanced antileukemic activity of allogeneic peripheral blood progenitor cell transplants following donor treatment with the combination of granulocyte colony-stimulating factor (G-CSF) and stem cell factor (SCF) in a murine transplantation model. *Bone Marrow Transplant.* **32**:49.
- Ohmura *et al.* (2003) Increment of murine spermatogonial cell number by gonadotropin-releasing hormone analogue is independent of stem cell factor c-kit signal. *Biol. Reprod.* **68**:2304.
- Simpson *et al.* (2003) Stem cell factor attenuates liver damage in a murine model of acetaminophen-induced hepatic injury. *Lab. Invest.* **83**:199.
- Metcalf *et al.* (2002) Stem cell factor can stimulate the formation of eosinophils by two types of murine eosinophil progenitor cells. *Stem Cells.* **20**:460.