Sterile

#5223

Mouse Stem Cell Factor (mSCF)

Cell Signaling TECHNOLOGY®

- ☐ SC 10 µg (With Carrier)
- ☐ SF 10 µg (Carrier Free)
- ☐ LC 50 µg (With Carrier)
- ☐ LF 50 µg (Carrier Free)

Multi-milligram quantities available

New 05/11

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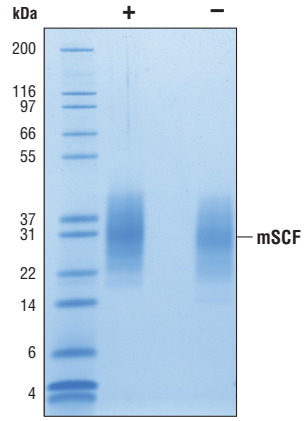
Source: Recombinant mouse SCF (mSCF) Lys26-Ala189 (Accession #NP_038626) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant mSCF contains no "tags" and the nonglycosylated protein has a calculated MW of 18,298. DTT-reduced and non-reduced protein migrate as 22-35 kDa polypeptides. Lower mobility and heterogeneity in SDS-PAGE are due to glycosylation. The expected amino-terminal KEICG of recombinant mSCF was verified by amino acid sequencing.

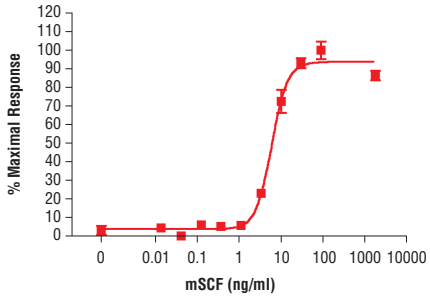
Endotoxin: Less than 0.01 ng endotoxin/1µg mSCF.

Purity: >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant mSCF. All lots are greater than 98% pure.

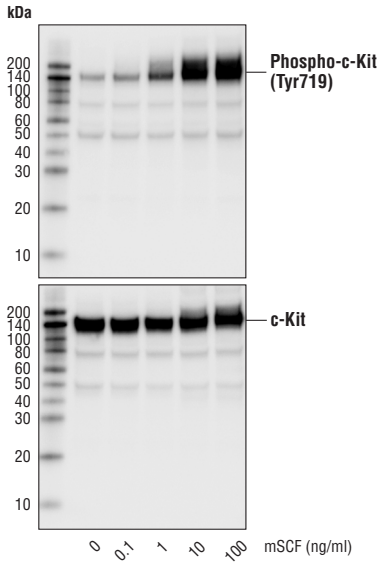


The purity of recombinant mSCF was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant mSCF and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant mSCF was determined in an M-07e cell proliferation assay. The ED_{50} of each lot is between 2-8 ng/ml.



The proliferation of M-07e cells treated with increasing concentrations of mSCF was assessed. After 48 hour treatment with mSCF, cells were incubated with a tetrazolium salt and the OD_{450} - OD_{650} was determined.



Western blot analysis of extracts from M-07e cells untreated or treated with mSCF for 5 minutes, using Phospho-c-Kit (Tyr719) Antibody #3391 (upper) and c-Kit (D13A2) XP® Rabbit mAb #3074 (lower).

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg mSCF.

Carrier free: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

Reconstitution:
With carrier: Add sterile PBS or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final mSCF concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS or PBS containing protein to minimize absorption of mSCF to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock mSCF should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at 4°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: SCF is produced by endothelial cells, fibroblasts, keratinocytes, gut epithelial cells, and tumor cells (1,2). SCF is critical for hematopoiesis and mast cell differentiation and has additional roles in survival and function of other cell types (1). Some tumor cell proliferation and invasiveness are promoted by SCF (3). Tumor-derived SCF appears to be involved in expansion of myeloid-derived suppressor cells which, in turn, limits proliferation of tumor-infiltrating T-cells (4). SCF may have additional roles in the tumor microenvironment (2). SCF is either soluble or an integral membrane protein and its form is dependant on variation in splicing or proteolytic release (1). SCF binds to the receptor tyrosine kinase c-Kit and induces activation of the Akt, Erk, JNK, and p38 pathways (5,6).

Background References:

(1) Broudy, V.C. (1997) *Blood* 90, 1345-64.

(2) Huang, B. et al. (2008) *Blood* 112, 1269-79.

(3) Yasuda, A. et al. (2006) *Mol Cancer* 5, 46.

(4) Pan, P.Y. et al. (2008) *Blood* 111, 219-28.

(5) Samayawardhena, L.A. and Pallen, C.J. (2008) *J Biol Chem* 283, 29175-85.

(6) Huang, H.M. et al. (2000) *Blood* 96, 1764-71.