Miltenyi Biotec

Mouse SCF
research grade

Contents

1. Description

Products Mouse SCF, research grade.

Recombinant mouse stem cell factor.

Content in µg	Order no.
10	130-094-079
25	130-101-741

Biological activity The ED_{50} is ≤50 ng/mL corresponding to an activity of ≥2×10^4 U/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay using TF-1 cells according to Kitamura, T. *et al.*[1]

Primary structure Two identical, non-covalently linked, non-glycosylated polypeptide chains (165 amino acid residues, including an N-terminal methionine).

Molecular mass 18.4 kDa (monomer).

Source Produced in *E. coli*.

Product format Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer Mannitol and trehalose.

Purity >97% as determined by SDS-PAGE analysis.

Endotoxin level Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage Lyophilized Mouse SCF, research grade should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution It is recommended to reconstitute lyophilized Mouse SCF, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

Stem cell factor (SCF), also known as c-kit ligand, is a hematopoietic growth factor important for the survival, proliferation, and differentiation of hematopoietic stem cells and progenitor cells. Besides its pivotal role in mast cell development, SCF acts as a potent mast cell chemoattractant and upregulates mast cell adhesion and migration. SCF signals through the c-kit receptor (CD117) and exists in two forms, cell surface bound SCF and soluble SCF. The secreted soluble form of SCF is produced by the proteolytic processing of the cell surface anchored precursor molecule. Recombinant Mouse SCF corresponds to the secreted soluble form.

1.2 Applications

Mouse SCF may be used for a variety of applications, including:

- *In vitro* culture and expansion of hematopoietic progenitor cells.
- Colony formation assays.
- Differentiation of ES-derived cells towards the hematopoietic lineage.
- Mast cell differentiation and maintenance.
- Investigation of receptor signaling.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Kitumura, T. *et al.* (1989) Establishment and characterization of a unique human cell line that proliferates dependently on GM-CSF, IL-3, or erythropoietin. J. Cell. Physiol. 140: 323–334.
2. Laurenti, E. *et al.* (2015) CDK6 levels regulate quiescence exit in human hematopoietic stem cells. Cell Stem Cell 16 (3): 302–313.
3. Dussiau, C. *et al.* (2015) Targeting IRAK1 in T-cell acute lymphoblastic leukemia. Oncotarget. 6: 18956–18965.
4. Brault, J. *et al.* (2014) Optimized generation of functional neutrophils and macrophages from patient-specific induced pluripotent stem cells: *ex vivo* models of X^0-linked, $AR22^0$- and $AR47^0$- chronic granulomatous diseases. Biores Open Access 3 (6): 311–326.
5. Dighe N. *et al.* (2014) Long-term reproducible expression in human fetal liver hematopoietic stem cells with a UCOE-based lentiviral vector. PLoS One 9 (8): e104805.
6. Velardi, E. *et al.* (2014) Sex steroid blockade enhances thymopoiesis by modulating Notch signaling. J. Exp. Med. 211 (12): 2341–2349.
7. Rodriguez, S. *et al.* (2011) The SKP2 E3 ligase regulates basal homeostasis and stress-induced regeneration of HSCs. Blood 117 (24): 6509–6519.
8. Steinleitner, K. *et al.* (2012) EVI1 and MDS1/EVI1 expression during primary human hematopoietic progenitor cell differentiation into various myeloid lineages. Anticancer Res. 32 (11): 4883–4889.
9. Narla, A. *et al.* (2011) Dexamethasone and lenalidomide have distinct functional effects on erythropoiesis. Blood 118 (8): 2296–2304.

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