Miltenyi Biotec

Human SCF
research grade

Contents

1. Description
   - 1.1 Background information
   - 1.2 Applications
2. References

1. Description

Products

Human SCF, research grade.

Recombinant human stem cell factor.

Content in µg	Order no.
10	130-093-991
25	130-096-692

Biological activity

The ED_{50} is ≤5 ng/mL corresponding to an activity of ≥2×10^5 U/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay using human TF-1 cells[1]. The proliferation assay was calibrated with the reference standard for human SCF (NIBSC code 91/682) provided bye the WHO/National Institute for Biological Standards and Control.

Primary structure

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

Molecular mass

18.6 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 Human 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 Human 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

SCF 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.

1.2 Applications

Human SCF can be used for a variety of applications, including:

- Stimulation of proliferation of myeloid, erythroid, and lymphoid progenitors in bone marrow cultures.
- *In vitro* expansion of $CD34^+$ hematopoietic progenitor cells.
- Differentiation of ES-derived cells towards the hematopoietic lineage.
- Mast cell differentiation and maintenance.
- Mast cell chemotaxis assays.

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. Dussiau, C. *et al.* (2015) Targeting IRAK1 in T-cell acute lymphoblastic leukemia. Oncotarget 6: 18956–18965.
3. Laurenti, E. *et al.* (2015) CDK6 levels regulate quiescence exit in human hematopoietic stem cells. Cell Stem Cell 16 (3): 302–313.
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. Velardi, E. *et al.* (2014) Sex steroid blockade enhances thymopoiesis by modulating Notch signaling. J. Exp. Med. 211 (12): 2341–2349.
6. 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.
7. 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.
8. Narla, A. *et al.* (2011) Dexamethasone and lenalidomide have distinct functional effects on erythropoiesis. Blood 118 (8): 2296–2304.

Refer to www.miltenyibiotec.com for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com for local Miltenyi Biotec Technical Support contact information.

140-002-377.06

Miltenyi Biotec B.V. & Co. KG
Friedrich-Ebert-Straße 68, 51429 Bergisch Gladbach, Germany
Phone +49 2204 8306-0, Fax +49 2204 85197
macsde@miltenyi.com
www.miltenyibiotec.com

Legal notices

Limited product warranty

Miltenyi Biotec B.V. & Co. KG and/or its affiliate(s) warrant this product to be free from material defects in workmanship and materials and to conform substantially with Miltenyi Biotec's published specifications for the product at the time of order, under normal use and conditions in accordance with its applicable documentation, for a period beginning on the date of delivery of the product by Miltenyi Biotec or its authorized distributor and ending on the expiration date of the product's applicable shelf life stated on the product label, packaging or documentation (as applicable) or, in the absence thereof, ONE (1) YEAR from date of delivery ("Product Warranty"). Miltenyi Biotec's Product Warranty is provided subject to the warranty terms as set forth in Miltenyi Biotec's General Terms and Conditions for the Sale of Products and Services available on Miltenyi Biotec's website at www.miltenyibiotec.com, as in effect at the time of order ("Product Warranty"). Additional terms may apply. BY USE OF THIS PRODUCT, THE CUSTOMER AGREES TO BE BOUND BY THESE TERMS.

THE CUSTOMER IS SOLELY RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR CUSTOMER'S PARTICULAR PURPOSE AND APPLICATION METHODS.

Technical information

The technical information, data, protocols, and other statements provided by Miltenyi Biotec in this document are based on information, tests, or experience which Miltenyi Biotec believes to be reliable, but the accuracy or completeness of such information is not guaranteed. Such technical information and data are intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. Miltenyi Biotec shall not be liable for any technical or editorial errors or omissions contained herein.

All information and specifications are subject to change without prior notice. Please contact Miltenyi Biotec Technical Support or visit www.miltenyibiotec.com for the most up-to-date information on Miltenyi Biotec products.

Licenses

This product and/or its use may be covered by one or more pending or issued patents and/or may have certain limitations. Certain uses may be excluded by separate terms and conditions. Please contact your local Miltenyi Biotec representative or visit Miltenyi Biotec's website at www.miltenyibiotec.com for more information.

The purchase of this product conveys to the customer the non-transferable right to use the purchased amount of the product in research conducted by the customer (whether the customer is an academic or for-profit entity). This product may not be further sold. Additional terms and conditions (including the terms of a Limited Use Label License) may apply.

CUSTOMER'S USE OF THIS PRODUCT MAY REQUIRE ADDITIONAL LICENSES DEPENDING ON THE SPECIFIC APPLICATION. THE CUSTOMER IS SOLELY RESPONSIBLE FOR DETERMINING FOR ITSELF WHETHER IT HAS ALL APPROPRIATE LICENSES IN PLACE. Miltenyi Biotec provides no warranty that customer's use of this product does not and will not infringe intellectual property rights owned by a third party. BY USE OF THIS PRODUCT, THE CUSTOMER AGREES TO BE BOUND BY THESE TERMS.

Trademarks

The Miltenyi Biotec logo is a registered trademark or trademark of Miltenyi Biotec and/or its affiliates in various countries worldwide.

Copyright © 2021 Miltenyi Biotec and/or its affiliates. All rights reserved.

140-002-377.06