

Human Granulocyte Colony Stimulating Factor (hG-CSF)

<input type="checkbox"/> SC 10 µg (With Carrier)	<input type="checkbox"/> SF 10 µg (Carrier Free)
<input type="checkbox"/> LC 50 µg (With Carrier)	<input type="checkbox"/> LF 50 µg (Carrier Free)

Multi-milligram quantities available

rev. 04/28/10



Cell Signaling
TECHNOLOGY®

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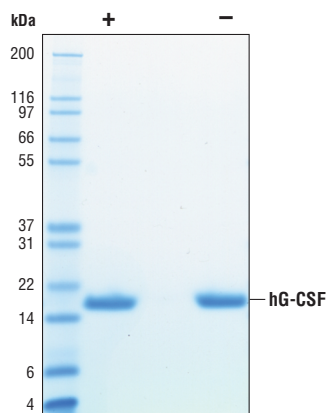
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Source: Recombinant human G-CSF (hG-CSF) Thr31-Pro204 (Accession #NP_757373) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant hG-CSF contains no "tags" and the nonglycosylated protein has a calculated MW of 18,986. DTT-reduced and non-reduced protein migrate as 18 kDa polypeptides. The expected amino-terminal TPLGP of recombinant hG-CSF was verified by amino acid sequencing.

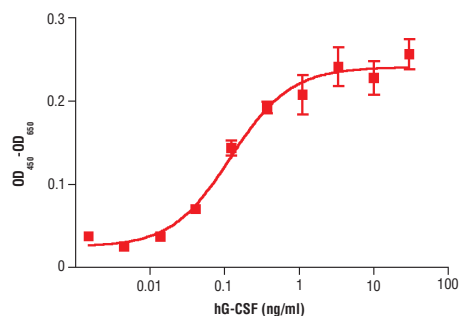
Endotoxin: Less than 0.01 ng endotoxin/1µg hG-CSF.

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

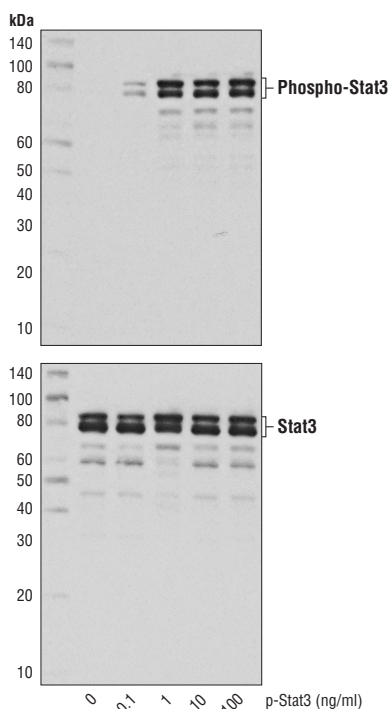


The purity of recombinant hG-CSF was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hG-CSF and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hG-CSF was determined in a M-NFS-60 cell proliferation assay. The ED₅₀ of each lot is between 20-150 pg/ml.



◀ The proliferation of M-NFS-60 cells treated with increasing concentrations of hG-CSF was assessed. After 72 hour treatment with hG-CSF, cells were incubated with a tetrazolium salt and the OD₄₅₀ - OD₆₅₀ was determined.



Western blot analysis of extracts from M-NFS-60 cells untreated or treated with hG-CSF for 15 minutes, using Phospho-Stat3 (Tyr705) (D3A7) Rabbit mAb #9145 (upper) or Stat3 Antibody #9132 (lower).

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of 40 mM phosphate pH 4.0 containing 250 mM NaCl and 20 µg BSA per 1 µg hG-CSF.

Carrier free: Lyophilized from a 0.22 µm filtered solution of 40 mM phosphate pH 4.0 containing 250 mM NaCl.

Reconstitution:

With carrier: Add sterile 40 mM phosphate pH 4.0 to a final hG-CSF concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile 40 mM phosphate pH 4.0, or 40 mM phosphate pH 4.0 containing protein to minimize absorption of hG-CSF to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hG-CSF 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: G-CSF is a hematopoietic cytokine essential for neutrophil development, survival, and egress from bone marrow (1-4). Macrophages and monocytes are the predominant producers of G-CSF (3) and endothelial cells, fibroblasts and neuronal cells can produce G-CSF in response to inflammatory stimuli (3). G-CSF inhibits apoptosis in neutrophils and neurons (4,5). G-CSF stimulates proliferation and differentiation of neuronal progenitor cells (5). G-CSF binding to G-CSFR induces receptor dimerization and activation of Jak1/2 tyrosine phosphorylation (3,6). Signaling is through Stat3, ERK, p38, and Akt (5,6). Absence of functional G-CSF or its receptor in humans and mice causes neutropenia (7,8).

Background References:

- (1) Furze, R.C. and Rankin, S.M. (2008) *Immunology* 125, 281-8.
- (2) Demetri, G.D. and Griffin, J.D. (1991) *Blood* 78, 2791-808.
- (3) Srinivasa, S.P. and Doshi, P.D. (2002) *Leukemia* 16, 244-53.
- (4) van Raam, B.J. et al. (2008) *Blood* 112, 2046-54.
- (5) Schneider, A. et al. (2005) *J Clin Invest* 115, 2083-98.
- (6) Nicholson, S.E. et al. (1994) *Proc Natl Acad Sci U S A* 91, 2985-8.
- (7) Lieschke, G.J. et al. (1994) *Blood* 84, 1737-46.
- (8) Dong, F. et al. (1994) *Proc Natl Acad Sci U S A* 91, 4480-4.

Material Safety Data Sheet (MSDS) for Human Granulocyte Colony-Stimulating Factor (hG-CSF)



I. Identification:

Product name: Human Granulocyte Colony-Stimulating Factor (hG-CSF)
Product Catalog: 8930
CAS#: 143011-72-7
Manufacturer Supplier: Cell Signaling Technology
 3 Trask Lane
 Danvers, MA 01923 USA
 978-867-2300 TEL
 978-867-2400 FAX
 978-578-6737 EMERGENCY TEL

II. Composition/Information:

Substance Name: Granulocyte Colony-Stimulating factor, human, recombinant, from human 293 cells

Synonym: G-CSF

CAS#: 143011-72-7

III. Hazard Identification:

!! CAUTION: This product is not for use in humans. It is intended for research purposes only. To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been established.

EMERGENCY OVERVIEW

OSHA: No known hazards. This substance is not classified as dangerous according to Directive 67/548/EEC.

IV. First Aid Measures:

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, get medical attention.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Get medical attention.

Skin exposure: In case of contact, immediately wash skin with soap and water for at least 15 minutes. Remove contaminated clothing. Wash clothing before reuse.

Eye exposure: In case of contact with eyes, immediately flush eyes with water for at least 15 minutes. Get medical attention.

V. Fire Fighting Measures:

Flash Point: Data not available.

Autoignition Temperature: Data not available.

Explosion: Data not available.

Fire extinguishing media: Water spray, dry chemical, alcohol foam, or carbon dioxide.

Firefighting: Wear protective clothing and self-contained breathing apparatus to prevent contact with skin and eyes. May emit toxic fumes under fire conditions.

VI. Accidental Release Measures: Wear appropriate personal protective equipment. Sweep up material and avoid raising dust. Transfer to a closed chemical waste container for disposal. Wash spill site after material has been picked up for disposal.

VII. Handling And Storage:

Store in tightly closed container at 4°C. Avoid inhalation. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

VIII. Exposure Controls/Personal:

Ventilation System: A system of local and/or general exhaust is recommended.

Skin Protection: Wear compatible chemical resistant gloves and protective clothing.

Eye protection: Wear protective safety glasses or chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical And Chemical Properties

Appearance: lyophilized powder
pH: data not available
Melting Point: data not available
Flash Point: data not available
Boiling Point: data not available
Freezing Point: data not available
Volatile Organic Compounds: data not available
Solubility in water: soluble in water

X. Stability and Reactivity:

Stability: Stable under normal conditions.

Conditions to avoid: Strong oxidizing agents

Hazardous Decomposition: Data not available.

XI. Toxicological Information:

Acute Effects: Not established.

Chronic Effects: Not established.

Potential Health Effects: Not established.

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

XII. Ecological Information:

No data available.

XIII. Disposal Considerations: Dispose of in accordance with federal, state, local environmental regulations.

XIV. Transport Information:

DOT: Not dangerous goods.

ADR/RID: Not dangerous goods.

IMDG: Not dangerous goods.

IATA : Not dangerous goods.

XV. Regulatory Information:

Labeling according to EC Directives:

This product does not need to be labeled, in accordance with EC Directives or respective laws.

US Regulatory Information:

SARA Listed: No.

Canada (WHMIS): DSL No, NDSL No.

XVI. Other Information:

This compound is sold only for research use only. It is not for use in humans. To the best of our knowledge, this document is accurate. It is intended to serve as a guide for safe use of this product in a laboratory setting by experienced personnel. The burden of safe use of this material rests entirely with the user. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product.