

# Recombinant Human Pegylated Granulocyte Colony Stimulating Factor

Cat. No. CSF3-02H Lot. No. (See product label)

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Product Overview</b> | Recombinant Human G-CSF produced in <i>E. coli</i> is a single, non-glycosylated, polypeptide chain containing 175 amino acids and having a molecular mass of 18,800 Dalton. PEG-GCSF is manufactured by attaching a 20,000 Dalton methoxypolyethylene glycol propionaldehyde (mPEG-ALD) to the N-terminal amino acid of G-CSF having a total molecular mass of 38800 Dalton.                                                                                                                                                                                                                                                                |
| <b>Species</b>          | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Source</b>           | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Description</b>      | A glycoprotein of MW 20 kDa containing internal disulfide bonds. It induces the survival, proliferation, and differentiation of neutrophilic granulocyte precursor cells and functionally activates mature blood neutrophils. Among the family of colony-stimulating factors, G-CSF is the most potent inducer of terminal differentiation to granulocytes and macrophages of leukemic myeloid cell lines. The synthesis of G-CSF can be induced by bacterial endotoxins, TNF, IL-1 and GM-CSF. Prostaglandin E2 inhibits the synthesis of G-CSF. In epithelial, endothelial, and fibroblastic cells secretion of G-CSF is induced by IL-17. |
| <b>Purity</b>           | >95% as determined by HPLC, FPLC and SDS-PAGE Silver Stained gel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Formulation</b>      | The protein was extensively dialyzed against 10mM sodium acetate buffer PH= 4 and 5% mannitol was added.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Specific Activity</b> | PEG-GCSF is fully biologically active when compared to standard. The ED50, calculated by the dose-dependant proliferation of murine NFS-60 indicator cells is less than 0.1 ng/ml, corresponding to a Specific Activity of $1.0 \times 10^7$ IU/mg. |
| <b>Endotoxin</b>         | Less than 0.1 ng/g (1IEU/g) of PEG-GCSF.                                                                                                                                                                                                            |
| <b>Reconstitution</b>    | It is recommended to reconstitute the lyophilized PEG-GCSF in sterile 18MΩ-cm H <sub>2</sub> O not less than 100g/ml, which can then be further diluted to other aqueous solutions.                                                                 |
| <b>Storage</b>           | PEG-GCSF although stable at 15°C for 1 week, should be stored between 2°C -8°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Aliquot to avoid repeated freeze-thaw cycles.                                   |

## GENE INFORMATION

|                       |                                                                                                                                                                                                                                    |
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| <b>Gene Name</b>      | CSF3                                                                                                                                                                                                                               |
| <b>Synonyms</b>       | G-CSF; GCSF; MGC45931; colony stimulating factor 3 (granulocyte); colony stimulating factor 3; granulocyte colony stimulating factor; pluripoietin; filgrastim; lenograstim; Granulocyte colony-stimulating factor precursor; CSF3 |
| <b>Gene ID</b>        | 1440                                                                                                                                                                                                                               |
| <b>mRNA Refseq</b>    | NM_000759                                                                                                                                                                                                                          |
| <b>Protein Refseq</b> | NP_000750                                                                                                                                                                                                                          |
| <b>MIM</b>            | 138970                                                                                                                                                                                                                             |
| <b>UniProt ID</b>     | P09919                                                                                                                                                                                                                             |

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| <b>Chromosome Location</b> | 17q11.2-q12                                                                                                                |
| <b>Pathway</b>             | Cytokine-cytokine receptor interaction; Hematopoietic cell lineage; Jak-STAT signaling pathway                             |
| <b>Function</b>            | cytokine activity; enzyme binding; granulocyte colony-stimulating factor receptor binding; interleukin-6 receptor binding. |

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