# **Recombinant Human G-CSF/CSF3 Protein (Active)**

Catalog Number: PKSH031936



Note: Centrifuge before opening to ensure complete recovery of vial contents.

## **Description**

**Synonyms** Granulocyte Colony-Stimulating Factor; G-CSF; Pluripoietin; Filgrastim;

Lenograstim; CSF3; C17orf33; GCSF

Species Human

Expression Host HEK293 Cells
Sequence Ala30-Pro204
Accession NP\_757373.1
Calculated Molecular Weight 18.7 kDa
Observed molecular weight 17.8 kDa

**Bioactivity** Measured in a cell proliferation assay using NFS-60 mouse myelogenous leukemia

lymphoblast cells. The ED50 for this effect is typically 0.04-0.2 ng/mL.

### **Properties**

**Purity** > 95 % as determined by reducing SDS-PAGE.

**Endotoxin** < 1.0 EU per µg of the protein as determined by the LAL method.

Storage Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C.

Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of

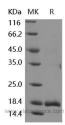
reconstituted samples are stable at < -20°C for 3 months.

**Shipping** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation** Lyophilized from sterile PBS, pH 7.4.

**Reconstitution** Please refer to the printed manual for detailed information.

#### Data



## **Background**

Granulocyte-colony stimulating factor (G-CSF) is a growth factor and an essential cytokine belonging to the CSF family of hormone-like glycoproteins. It is produced by numerous cell types including immune and endothelial cells. G-CSF binding to its receptor G-CSF-R which belongs to the cytokine receptor type I family depends on the interaction of alphahelical motifs of the former and two fibronectin type III as well as an immunoglobulin-like domain of the latter. Recent animal studies have also revealed that G-CSF activates multiple signaling pathways, such as Akt and also the Janus family kinase-2 and signal transducer and activation of transcription-3 (Jak2-STAT3) pathway, thereby promoting survival, proliferation, differentiation and mobilisation of haematopoietic stem and progenitor cells. G-CSF is a cytokine that have been demonstrated to improve cardiac function and perfusion in myocardial infarction. And it was initially evaluated as a stem cell mobilizer and erythropoietin as a cytoprotective agent. G-CSF prevents left ventricular remodeling after

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myocardial infarction by decreasing cardiomyocyte death and by increasing the number of blood vessels, suggesting the importance of direct actions of G-CSF on the myocardium rather than through mobilization and differentiation of stem cells. Accordingly, recombinant human (rh)G-CSF has been extensively used in clinical haematology and oncology to enable bone marrow transplantation or to treat chemotherapy-associated neutropenia. In preclinical study, G-CSF improved cardiac function and perfusion by angiomyogenesis and protection of cardiomyocytes in myocardial infarction.

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