

Recombinant Human G-CSF/CSF3 Protein (Active)

Catalog No. PKSH031936

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

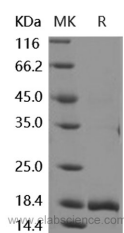
Description

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.
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 alpha-helical 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

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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 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.