

Recombinant Human CSF-3/G-CSF Protein

Catalog No.: RP01722

Sequence Information

Species **Gene ID**
Human 1440

Swiss Prot **Tags**
P09919-2 C-6His

Synonyms

GCSF; CSF3OS; C17orf33; CSF3

Product Information

Source **Purification**
HEK293 cells ≥ 95 % as
 determined by
 SDS-PAGE; ≥ 95
 % as determined
 by HPLC.

Calculated MW **Observed MW**
22.82 kDa 20 kDa

Endotoxin

< 0.1 EU/μg of the protein by LAL method.

Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1–0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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 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.

Basic Information

Description

Recombinant Human CSF-3/G-CSF Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Met1-Pro204) of human G-CSF/CSF3 (Accession #NP_757373.1) fused with a 6×His tag at the C-terminus.

Activity

1. Measured in a cell proliferation assay using NFS-60 mouse myelogenous leukemia lymphoblast cells. The ED₅₀ for this effect is 41–164 pg/mL.

Shipping

Lyophilized proteins are shipped at ambient temperature. Liquid proteins are shipped at frozen temperature with dry ice. Upon receipt, store it immediately at the temperature recommended below.

Storage

Store at -20°C

Operational Notes

For your safety and health, please wear a lab coat and disposable gloves for handling.

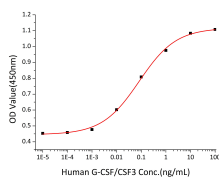
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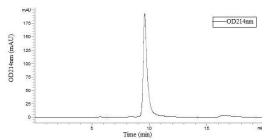
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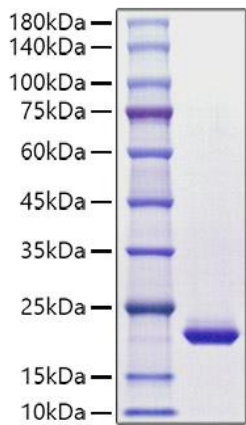
Validation Data



Recombinant Human G-CSF/CSF3 stimulates cell proliferation of the NFS-60 mouse myelogenous leukemia lymphoblast cells. The ED₅₀ for this effect is 41-164 pg/mL.



Recombinant Human CSF-3/G-CSF Protein is greater than 95% as determined by SEC-HPLC.



Recombinant Human CSF-3/G-CSF Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.