

Human G-CSF / CSF3 Protein (isoform b)

Catalog Number: 10007-HNCH



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

C17orf33; C17orf33OS; CSF3OS; G-CSF; GCSF

Protein Construction:

A DNA sequence encoding the human GCSF isoform b (NP_757373.1) (Ala30-Pro204) was expressed.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

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.

Endotoxin:

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

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Ala 30

Molecular Mass:

The recombinant human GCSFb consists of 175 amino acids and has a calculated molecular mass of 18.7 kDa. It migrates as an approximately 17.8 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

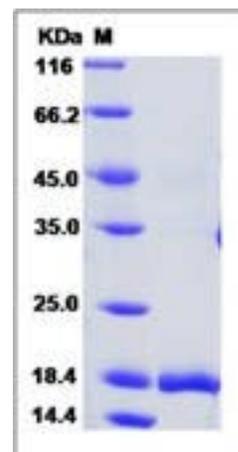
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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.

References

- 1.Takano H, *et al.* (2007) G-CSF therapy for acute myocardial infarction. *Trends Pharmacol Sci.* 28(10): 512-7.
- 2.Klocke R, *et al.* (2008) Granulocyte colony-stimulating factor (G-CSF) for cardio- and cerebrovascular regenerative applications. *Curr Med Chem.* 15(10): 968-77.
- 3.Kang HJ, *et al.* (2008) G-CSF- and erythropoietin-based cell therapy: a promising strategy for angiomyogenesis in myocardial infarction. *Expert Rev Cardiovasc Ther.* 6(5): 703-13.

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For US Customer: Fax: 267-657-0217 ● Tel: 215-583-7898

Global Customer: Fax :+86-10-5862-8288 ● Tel:+86-400-890-9989 ● <http://www.sinobiological.com>