Human G-CSF / CSF3 Protein (Fc Tag)

Catalog Number: **10007-H01H**

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

C17orf33; C17orf33OS; CSF3OS; G-CSF; GCSF

Protein Construction:

A DNA sequence encoding the mature form of human GCSF isoform b (NP_757373.1) (Ala 30-Pro 204) was fused with the Fc region of human IgG1 at the N-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

Measured in a cell proliferation assay using a murine myeloblastic cell line, NFS-60. The ED_{50} for this effect is typically 0.2-0.8 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 ℃

Predicted N terminal: Glu 20

Molecular Mass:

The recombinant mature human GCSFb/Fc chimera is a disulfide-linked homodimeric protein. The reduced monomer consists of 412 amino acids and has a calculated molecular mass of 45.4 kDa. As a result of glycosylation, the rh GCSFb/Fc monomer migrates as an approximately 48 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 100mM Glycine, 10mM NaCl, 50mM Tris, pH 7.5

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:

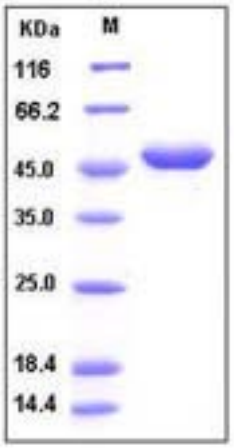
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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.