# **PRODUCT INFORMATION**

**Expression system** E.coli

**Domain** 18-144aa

**UniProt No.** P04141

NCBI Accession No. NP\_000749

### **Alternative Names**

Granulocyte-macrophage colony stimulating factor, CSF2, GMCSF, GM-CSF, GM-CSF, Colony-stimulating factor, CSF, Sargramostim, Molgramostin, Granulocyte-macrophage colony-stimulating factor, Granulocyte-macrophage colony stimulating factor Burst Promoting Activity, CMCSF, Colony stimulating factor, Colony Stimulating Factor 2, CSF 2, CSF Alpha, Eosinophil Colony Stimulating Factor, Granulocyte Macrophage Colony Stimulating Factor, MGC131935, MGC138897, Pluripoietin Alpha,

# **PRODUCT SPECIFICATION**

### **Molecular Weight**

14.6 kDa (128aa) confirmed by MALDI-TOF

**Concentration** 1mg/ml (determined by Bradford assay)

#### Formulation

Liquid in. Phosphate-Buffered Saline (pH 7.4)

Purity

> 95% by SDS-PAGE

#### **Endotoxin level**

< 1 EU per 1ug of protein (determined by LAL method)

## **Biological Activity**

Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The ED50 range  $\leq$  50pg/ml.

## Tag

Non-Tagged

Application

SDS-PAGE, Bioactivity

## **Storage Condition**

Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.



# BACKGROUND

### Description

Human GM-CSF is a 14. 6 kDa globular protein consisting of 128 amino acid containing two dislufied bonds. GM-CSF is a hematopoietic growth factor that stimulates the development of neutrophils and macrophages and promotes the proliferation and development of early erythroid megakaryocytic and eosinophilic progenitor cells. It is produced in by endothelial cells, monocytes, fibroblasts and T-lymphocytes. GM-CSF inhibits neutrophil migration and enhances the functional activity of the mature end-cells. Recombinant human GM-CSF was expressed in E. coli and purified by conventional chromatography, after refolding of the isolated inclusion bodies in a renaturation buffer.

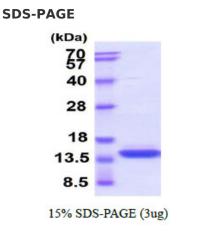
#### **Amino acid Sequence**

MAPARSPSPS TQPWEHVNAI QEARRLLNLS RDTAAEMNET VEVISEMFDL QEPTCLQTRL ELYKQGLRGS LTKLKGPLTM MASHYKQHCP PTPETSCATQ IITFESFKEN LKDFLLVIPF DCWEPVQE

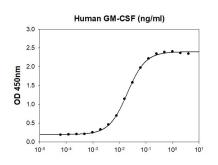
#### **General References**

Trapnell BC, et al. (2002) Annu Rev Physiol. 64, 775-80 Wong GG, et al (1985) Science, 228, 810-815

## DATA



## **Biological Activity**



3ug by SDS-PAGE under reducing condition and visualized by coomassie blue stain.

Human GM-CSF in a cell proliferation assay using TF-1 human erythroleukemic cell. The ED50 range  $\leq$  50pg/ml.