

## PRODUCT DESCRIPTION

Granulocyte colony-stimulating factor (G-CSF) is a pleiotropic cytokine with an effect on the proliferation, differentiation and activation of granulocyte and primitive hematopoietic progenitors. It is produced mainly by monocytes and macrophages upon activation by endotoxin, TNF- $\alpha$  and IFN- $\gamma$ . Other cell types that can secrete G-CSF include fibroblasts, endothelial cells, astrocytes and bone marrow stromal cells. Two distinct cDNA clones for human G-CSF encoding 207 and 204 amino acid precursor proteins have been isolated. The recombinant G-CSF contains 175 amino acid residues and has a predicted molecular mass of approximately 18.8 kDa.

## SOURCE

A DNA sequence encoding the mature human G-CSF protein generated from the 204 amino acid residue precursor G-CSF isoform<sup>1,2</sup> was expressed in *E. coli*.

## PURITY

Purity is greater than 97%, as determined by SDS-PAGE and visualized by silver stain. Endotoxin level is <1.0 EU per 1  $\mu$ g cytokine, as determined by the LAL method.

## ACTIVITY

The biological activity of recombinant human G-CSF is measured in a cell proliferation assay using a murine myeloblastic cell line, NFS-60.<sup>3</sup> The ED<sub>50</sub> for this effect is typically 10 - 60 pg/mL.

## FORMULATION

Recombinant human G-CSF is lyophilized from a 0.2  $\mu$ m filtered solution in 10 mM acetic acid and 50  $\mu$ g bovine serum albumin per 1  $\mu$ g cytokine.

## RECONSTITUTION

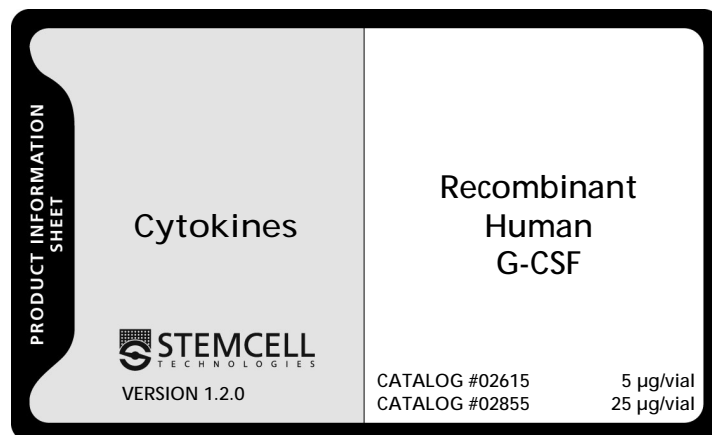
Reconstitute human G-CSF at a concentration greater than 10  $\mu$ g/mL with sterile phosphate buffered saline (PBS) containing at least 0.1% human or bovine serum albumin.

## STABILITY AND STORAGE

Lyophilized human G-CSF is stable for up to twelve months from date of receipt at -20°C to -70°C.

Reconstituted human G-CSF can be stored under sterile conditions at 2°C - 8°C for one month, or at -20°C to -70°C (in a manual defrost freezer) for three months without detectable loss of activity.

**Avoid repeated freezing and thawing.**



## REFERENCES

1. Souza LM, Boone TC, Gabrilove J, Lai PH, Zsebo KM, Murdock DC, Chazin VR, Bruszewski J, Lu H, Chen KK, *et al.*: Recombinant human granulocyte colony-stimulating factor: effects on normal and leukemic myeloid cells. *Science* 232: 61-65, 1986
2. Nagata S, Tsuchiya M, Asano S, Kaziro Y, Yamazaki T, Yamamoto O, Hirata Y, Kubota N, Oheda M, Nomura H, Ono M: Molecular cloning and expression of cDNA for human granulocyte colony-stimulating factor. *Nature* 319: 415-418, 1986
3. Shirafuji N, Asano S, Matsuda S, Watari K, Takaku F, Nagata S: A new bioassay for human granulocyte colony-stimulating factor (hG-CSF) using murine myeloblastic NFS-60 cells as targets and estimation of its levels in sera from normal healthy persons and patients with infectious and hematological disorders. *Exp Hematol* 17: 116-119, 1989