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-α and IFN-γ. 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.

PRODUCT INFORMATION SHEET

Cytokines

STEMCELL TECHNOLOGIES

VERSION 1.2.0

Recombinant Human G-CSF

CATALOG #02615 5 µg/vial
CATALOG #02855 25 µg/vial

SOURCE

A DNA sequence encoding the mature human G-CSF protein generated from the 204 amino acid residue precursor G-CSF isoform[1,2] 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 µg 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.[3] The ED_{50} for this effect is typically 10 - 60 pg/mL.

FORMULATION

Recombinant human G-CSF is lyophilized from a 0.2 µm filtered solution in 10 mM acetic acid and 50 µg bovine serum albumin per 1 µg cytokine.

RECONSTITUTION

Reconstitute human G-CSF at a concentration greater than 10 µg/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

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