Data sheet

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Jena Bioscience

G-CSF
Granulocyte-Colony Stimulating Factor
human, recombinant, *E. coli*

Cat. No.	Amount
PR-423	10 μg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -20°C

Avoid freeze / thaw cycles

Form
Lyophilized. G-CSF was lyophilized after dialysis against 10 mM sodium acetate pH 4.0.

Solubility
It is recommended to reconstitute the lyophilized G-CSF in sterile bidest H_2O not less than 100 μg/ml, which can then be further diluted to other aqueous solutions. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Activity
ED_{50}: < 0.1 ng/ml corresponding to a specific activity of 1 x 10^8 IU/mg, calculated by the dosedependant proliferation of murine NFS-60 indicator cells (measured by 3H-thymidine uptake).

Endotoxin
Less than 0.1 ng/μg (IEU/μg) of G-CSF.

Molecular Weight
19 kDa

Purity
$\geq$ 95% by SDS-PAGE and RP-HPLC

Description
G-CSF is a glycoprotein with a molecular weight of 20 kDa containing internal disulfide bonds. It induces the survival, proliferation, and differentiation of neutrophilic granulocyte precursor cells and functionally activates mature blood neutrophils. Among the family of colony-stimulating factors, G-CSF is the most potent inducer of terminal differentiation to granulocytes and macrophages of leukemic myeloid cell lines. The synthesis of G-CSF can be induced by bacterial endotoxins, TNF, Interleukin-1, and GM-CSF (cat.# PR-436 or PR-437). Prostaglandin E2 inhibits the synthesis of G-CSF. In epithelial, endothelial, and fibroblastic cells secretion of G-CSF is induced by Interleukin-17.
Recombinant human G-CSF produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 175 amino acids and having a molecular mass of 18.8 kDa. Recombinant G-CSF is purified by proprietary chromatographic techniques.

Selected References:

Worden *et al.* (2005) Randomized phase II evaluation of 6 g/m2 of ifosfamide plus doxorubicin and granulocyte colony-stimulating factor (G-CSF) compared with 12 g/m2 of ifosfamide plus doxorubicin and G-CSF in the treatment of poor-prognosis soft tissue sarcoma. *J. Clin. Oncol.* **23**:105.
Lozano *et al.* (2004) Detection of free hepatitis C virus core antigen by enzyme-linked immunosorbent assay is not suitable for screening of granulocyte colony-stimulating factor-mobilized hematopoietic progenitor donors. *Transfusion* **44**:1755.
Youssef *et al.* (2004) Effect of bovine granulocyte colony-stimulating factor on the development of pneumonia caused by Mannheimia haemolytica. *Vet. Pathol.* **41**:649.
Hisashi *et al.* (2004) Granulocyte-colony stimulating factor enhanced the recruitment of bone marrow cells into the heart: time course evaluation of phenotypic differentiation in the doxorubicin-induced cardiomyopathic model. *Jpn. J. Thorac. Cardiovasc. Surg.* **52**:451.
Jorgensen *et al.* (2005) Granulocyte-colonystimulating factor (Filgrastim) may overcome imatinib-induced neutropenia in patients with chronic-phase myelogenous leukemia. *Cancer* **103**:210.
Kleinschnitz *et al.* (2004) Induction of granulocyte colony-stimulating factor mRNA by focal cerebral ischemia and cortical spreading depression. *Brain Res. Mol. Brain Res.* **131**:73.