

G-CSF, pegylated (Granulocyte-Colony Stimulating Factor) Human, Recombinant, *E. coli*

Cat. No.	Amount
PR-425	10 µg

Liquid. Supplied in 10 mM sodium acetate, pH 4.0, and 5% mannitol.

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. rHuPEG-G-CSF is manufactured by attaching a 20 kDa methoxypolyethylene glycol propionaldehyde (mPEG-ALD) to the N-terminal amino acid of G-CSF having a total molecular mass of 38.8 kDa.

The G-CSF is purified by proprietary chromatographic techniques.

AVOID FREEZE/THAW CYCLES.

For in vitro use only!

Purity: ≥ 98% by SDS-PAGE, RP-HPLC, and FPLC.

Activity: ED₅₀ < 0.1 ng/ml corresponding to a specific activity of 1 × 10⁸ IU/mg, calculated by the dose-dependent proliferation of murine NFS-60 indicator cells (measured by 3H-thymidine uptake).

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

Store: -20°C

For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

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 S.A. and Clark M.E. (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 H.G. and Copland M. (2005) Granulocyte-colony-stimulating 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.