**rHu G-CSF**

**recombinant Human Granulocyte Colony Stimulating Factor**

**Product code A8270**

**Description:**
A glycoprotein of MW 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. 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 KD.

**Physical Appearance:** sterile filtered white lyophilized (freeze-dried) powder.

**Source:** *E. coli*

**Formulation:** Recombinant G-CSF was lyophilized after extensive dialysis against 10 mM sodium acetate buffer, pH 4.

**Reconstitution:** It is recommended to reconstitute the lyophilized product with sterile water at a concentration of 0.1 mg/ml, which can be further diluted into other aqueous solutions.

**Stability:** Lyophilized product is very stable at -20°C. Reconstituted material should be aliquoted and frozen at -20°C. It is recommended to add a carrier protein (0.1 % HSA or BSA) for long term storage.

**Purity:** > 95 % as determined by RP-HPLC, reducing and non-reducing SDS-PAGE.

**Protein Content:**
- determined by UV spectroscopy at 280 nm.
- Analysis by RP-HPLC calibrated against a known standard.
- Quantitation on SDS-PAGE against a known standard.

**Biological Activity:** Recombinant Human Granulocyte-Colony Stimulating Factor is fully biologically active when compared to standard. The ED_{50}, calculated by the dose-dependant proliferation of murine NFS-60 indicator cells (measured by 3H-thymidine uptake) is less then 0.1 ng/ml, corresponding to a Specific Activity of 1 x 10^8 IU/mg.

**Amino Acid Sequence:**
TPLGPASSLP QSFLRRQEMK VRKIQQDGAA LQEKLICATYK LCHHEELVVL GHSLGIPWAP LSCSFAQALQ
LAGCLSSLHS GLFLLQGLQL ALEGISPSLELG PTLDTQGLDQ ADFATTTWQQL MEELMPASAL QPTQGAMPAF
ASAFQRAGGG VLVASHLQSF LEVSYRVLRLH LAQP

**References**
1.) Thrombocytopenia in association with splenomegaly during granulocyte-colony-stimulating factor treatment in mice is not caused by hypersplenism and is resolved spontaneously. *Transfusion* (2007) 47(1), 41-49
3.) Ethnic differences in plasma levels of interleukin-8 (IL-8) and granulocyte colony stimulating factor (G-CSF). *Transl. Res.* (2007) 149(1), 10-14

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