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# Recombinant Human Granulocyte Colony-Stimulating Factor (G-CSF)

| Catalog No. | Size           | Species | Protein Accession No. |
|-------------|----------------|---------|-----------------------|
| RB-01-0007P | 10, 50, 100 µg | Human   | CAA27290.1            |

## Synonyms

Colony stimulating factor 3 (granulocyte), GCSF, granulocyte colony-stimulating factor; G-CSF3.

## Description

**Granulocyte colony-stimulating factor** (G-CSF, GCSF) is a colony-stimulating factor hormone. G-CSF is also known as colony-stimulating factor 3 (CSF3). G-CSF is produced by macrophages, endothelium, and a number of other immune cells. G-CSF is a glycoprotein, cytokine and growth factor and plays an important role in stimulating the bone marrow to produce granulocytes and stem cells. In addition to the effect on the hematopoietic system, G-CSF can also act on neuronal cells as a neurotrophic factor. The action of G-CSF in the central nervous system is to induce neurogenesis, increase the neuroplasticity and counteract apoptosis.

## Preparation

The human *G-CSF* (Thr31-Pro204) gene without signal peptide coding sequence was cloned and expressed in *Escherichia coli*. The recombinant protein has an *N*-terminal thioredoxin and a 6×histidine tags, and was purified by immobilized metal ion affinity chromatography (IMAC).

## Source

Recombinant histidine-tagged protein, purified from *E. coli*.

## Predicted Molecular Mass

~36.5 kDa with *N*-terminal thioredoxin and 6×histidine tags.

## Formulation

Recombinant GCSF is lyophilized from 400 µg/mL solution in 0.2 µm filtered PBS.

## Stability & Storage

- Lyophilized product is stable at room temperature for 3 weeks, and it is recommended to be stored desiccated below -20°C in a manual defrost freezer.
- **Reconstitution:** briefly spin the vial prior to opening to bring the contents to the bottom. It is recommended to reconstitute the lyophilized product with sterile water or PBS.
- Upon reconstituted, the protein should be stored at 4°C for one week. For long term storage, it is recommended to add a carrier protein (0.1% HSA or BSA) and store at -20 or -80°C. **Please avoid repeated freeze-thaw cycles.**

## Purity

>95%, determined by SDS-PAGE and stained with Coomassie blue.

## References

1. Souza LM, et al (1986). Recombinant human granulocyte colony-stimulating factor: effects on normal and leukemic myeloid cells. *Science* **232** (4746): 61–5.
2. Nagata S, et al (1986). Molecular cloning and expression of cDNA for human granulocyte colony-stimulating factor. *Nature* **319** (6052): 415–8.
3. Schneider A, et al. (2005). The hematopoietic factor G-CSF is a neuronal ligand that counteracts programmed cell death and drives neurogenesis. *J. Clin. Invest.* **115** (8): 2083–98.
4. Hirbe AC, et al. (2007). Granulocyte colony-stimulating factor enhances bone tumor growth in mice in an osteoclast-dependent manner. *Blood* **109** (8): 3424–31.
5. Pitzer C, et al (2008). Granulocyte-colony stimulating factor improves outcome in a mouse model of amyotrophic lateral sclerosis. *Brain* **131** (Pt 12): 3335–47.

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Not for diagnostic or therapeutic use.**