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Human Granulocyte Colony Stimulating Factor (hG-CSF)

10 µg

For Research Use Only. Not for Use in Diagnostic Procedures.

MW (kDa):	UniProt ID:	Entrez-Gene Id:
18	#P09919	1440

Background

G-CSF is a hematopoietic cytokine essential for neutrophil development, survival, and egress from bone marrow (1-4). Macrophages and monocytes are the predominant producers of G-CSF (3) and endothelial cells, fibroblasts and neuronal cells can produce G-CSF in response to inflammatory stimuli (3). G-CSF inhibits apoptosis in neutrophils and neurons (4,5). G-CSF stimulates proliferation and differentiation of neuronal progenitor cells (5). G-CSF binding to G-CSFR induces receptor dimerization and activation of Jak1/2 tyrosine phosphorylation (3,6). Signaling is through Stat3, ERK, p38, and Akt (5,6). Absence of functional G-CSF or its receptor in humans and mice causes neutropenia (7,8).

Endotoxin

Less than 0.01 ng endotoxin/1µg hG-CSF.

Purity

>98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hG-CSF. All lots are greater than 98% pure.

Source / Purification

Recombinant human G-CSF (hG-CSF) Thr31-Pro204 (Accession #NP_757373) was expressed in human 293 cells at Cell Signaling Technology.

Bioactivity

The bioactivity of recombinant hG-CSF was determined in a M-NFS-60 cell proliferation assay. The ED₅₀ of each lot is between 20-150 pg/ml.

Background References

1. Furze, R.C. and Rankin, S.M. (2008) *Immunology* 125, 281-8.
2. Demetri, G.D. and Griffin, J.D. (1991) *Blood* 78, 2791-808.
3. Srinivasa, S.P. and Doshi, P.D. (2002) *Leukemia* 16, 244-53.
4. van Raam, B.J. et al. (2008) *Blood* 112, 2046-54.
5. Schneider, A. et al. (2005) *J Clin Invest* 115, 2083-98.
6. Nicholson, S.E. et al. (1994) *Proc Natl Acad Sci U S A* 91, 2985-8.
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