

G-CSF (hBA-174): sc-4583

BACKGROUND

Granulocyte-colony stimulating factor, G-CSF, is a pleiotropic cytokine that influences differentiation, proliferation and activation of the neutrophilic granulocyte lineage. The murine G-CSF cDNA encodes a 208 amino acid precursor containing a 30 amino acid signal peptide that is proteolytically cleaved to form a 178 amino acid residue mature protein. Two G-CSF cDNAs which are identical except for a three amino acid deletion in the amino terminus of one form of the protein have been isolated from human cells. Murine and human G-CSF share 73% sequence identity at the amino acid level. G-CSF signals through the G-CSF receptor, G-CSFR, a heavily glycosylated 812 amino acid polypeptide with a single transmembrane domain. Stimulation of the G-CSFR results in the activation of the Ras/MAPK pathway and phosphorylation of the adaptor protein Shc. Other studies indicate that the kinases Lyn and Syk and the transcription factor Stat3 are activated in response to G-CSF stimulation.

REFERENCES

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4. Abrams, J. 1995. Immunoassay of mouse and human cytokines using NIP-labeled anti-cytokine antibodies. In Coligan J.E., Kruisbeek, A.M., Margulies D.H., Shevach E.M., Strober W. eds. *Current Protocols in Immunology*. New York: John Wiley and Sons, Unit 6.20.
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SOURCE

G-CSF (hBA-174) is produced in *E. coli* as 47 kDa biologically active, GST-tagged protein corresponding to 174 amino acids of G-CSF of human origin.

PRODUCT

G-CSF (hBA-174) is purified from bacterial lysates (>98%); supplied as 50 µg purified protein.

Biological Activity

G-CSF (hBA-174) is biologically active as determined by the dose-dependent stimulation of the proliferation of murine NFS-60 cells: ED₅₀ < 0.1 ng/ml.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

SELECT PRODUCT CITATIONS

1. Venables, J.P., Koh, C.S., Froehlich, U., Lapointe, E., Couture, S., Inkel, L., Bramard, A., Paquet, E.R., Watier, V., Durand, M., Lucier, J.F., Gervais-Bird, J., Tremblay, K., Prinos, P., Klinck, R., Elala, S.A. and Chabot, B. 2008. Multiple and specific mRNA processing targets for the major human hnRNP proteins. *Mol. Cell. Biol.* 28: 6033-6043.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.