

Human Cell Expressed G-CSF^{HcX} Catalog Number 1001_

Source	A DNA sequence encoding the human G-CSF protein sequence (containing the signal peptide sequence, and the mature G-CSF sequence) was expressed in modified human 293 cells.
Molecular Mass	Symansis G-CSF ^{HcX} migrates as a band between 15 and 20 kDa in SDS-PAGE. This compares with the predicted molecular mass of 18.7 kDa.
pI	Symansis G-CSF ^{HcX} separates into a number of isoforms with a pI between 5.4 and 6.0 in 2D PAGE Due to post-translational modifications, in particular glycosylation,. This compares with the unmodified G-CSF that has a predicted pI of 5.65.
Purity	>95%, as determined by SDS-PAGE and visualized by silver stain.
Formulation	When reconstituted in 0.5 ml sterile phosphate-buffered saline, the solution will contain 1% human serum albumin (HSA) and 10% trehalose.
Reconstitution	It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial.
Storage	Lyophilized products should be stored at 2 to 8°C. Following reconstitution short-term storage at 4°C is recommended, and longer-term storage of aliquots at -18 to -20°C. Repeated freeze thawing is not recommended.
Activity	The ED50 of G-CSF ^{HcX} is typically 0.01 - 0.03 ng/ml as measured in a cell proliferation assay using a murine myeloblastic M-NFS-60 cell line.
Background Information	<p>Granulocyte colony stimulating factor (G-CSF) is the primary extracellular regulator of granulopoiesis and regulates the production of neutrophils by stimulating proliferation and survival of specific bone marrow precursor cells and their differentiation into granulocytes. Neutrophils play a critical role in the defence against bacterial and fungal infections. G-CSF is produced by monocytes, macrophages, neutrophils, fibroblasts and endothelial cells and is capable of increasing the absolute number of circulating neutrophils and enhancing their antimicrobial function. Unlike GM-CSF, the activity of G-CSF is not species specific. Additionally, G-CSF production is inducible by cytokines including TNF-alpha, IL-1, GM-CSF, IL-17 and IL-4.</p> <p>Granulocyte colony stimulating factor (G-CSF) is a glycoprotein consisting of 207 amino acids. Differential splicing of G-CSF mRNA can result in two protein variants either 177- or 180-amino acids in length. G-CSF contains 5 cysteine residues, four of which form inter-molecular disulfide bonds. There is a potential O-glycosylation site at Thr-166, which inhibits aggregation and stabilises the molecule.</p> <p>For a recent review emphasising current advances in knowledge regarding G-CSF signaling, mechanisms of G-CSF-induced stem cell mobilization, and how G-CSF influences T-cell function and dendritic cell activation please refer to Roberts AW (2005) <i>Growth Factors</i>. 23(1): 33-41.</p>
Theoretical Sequence	TPLGPASSLPQSFLKCLEQVRKIQGDGAALQEKLKCATYKLCHPPEELVLLGHSLGIPWAPLSS CPSQALQLAGCLSQLHSGFLYQGLLQALEGISPELGPTLDTLQLDVADFATTIWQQMEELG MAPALQPTQGAMPAFASAFQRRAGGVLVASHLQSFLEVSYRVLRLHAQP