

# G-CSF (N-20): sc-1318

## 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

1. Nagata, S., et al. 1986. Molecular cloning and expression of cDNA for human granulocyte colony-stimulating factor. *Nature* 319: 415-418.
2. Tsuchiya, M., et al. 1986. Isolation and characterization of the cDNA for murine granulocyte colony-stimulating factor. *Proc. Natl. Acad. Sci. USA* 83: 7633-7637.
3. Tweardy, D.J., et al. 1995. Granulocyte colony-stimulating factor rapidly activates a distinct STAT-like protein in normal myeloid cells. *Blood* 86: 4409-4416.
4. Visani, G., et al. 1995. G-CSF in the biology and treatment of acute myeloid leukemias. *Leuk. Lymph.* 18: 423-428.

## CHROMOSOMAL LOCATION

Genetic locus: CSF3 (human) mapping to 17q21.1.

## SOURCE

G-CSF (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of mature G-CSF of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1318 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## APPLICATIONS

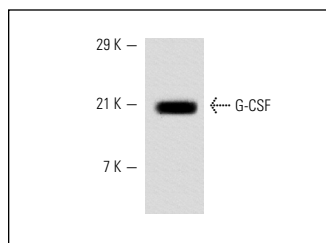
G-CSF (N-20) is recommended for detection of G-CSF of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

G-CSF (N-20) is also recommended for detection of G-CSF in additional species, including bovine, porcine and feline.

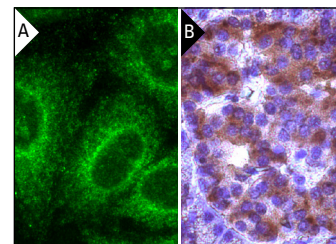
Suitable for use as control antibody for G-CSF siRNA (h): sc-39389, G-CSF shRNA Plasmid (h): sc-39389-SH and G-CSF shRNA (h) Lentiviral Particles: sc-39389-V.

Molecular Weight of G-CSF: 19 kDa.

## DATA



G-CSF (N-20): sc-1318. Western blot analysis of human recombinant G-CSF.



G-CSF (N-20): sc-1318. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of islet of Langerhans cells (B).

## SELECT PRODUCT CITATIONS

1. Vacanti, V., et al. 2005. Phenotypic changes of adult porcine mesenchymal stem cells induced by prolonged passaging in culture. *J. Cell. Physiol.* 205: 194-201.
2. Martins, A.J., et al. 2009. Reduced expression of basal and probiotic-inducible G-CSF in intestinal mononuclear cells is associated with inflammatory bowel disease. *Inflamm. Bowel Dis.* 15: 515-525.
3. Steffl, M., et al. 2010. Estrous cycle-dependent activity of neutrophils in the porcine endometrium: possible involvement of heat shock protein 27 and lactoferrin. *Anim. Reprod. Sci.* 121: 159-166.
4. Ma, Z.C., et al. 2011. Effects of ferulic acid on hematopoietic cell recovery in whole-body γ irradiated mice. *Int. J. Radiat. Biol.* 87: 499-505.

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Try **G-CSF (3D1): sc-53292**, our highly recommended monoclonal alternative to G-CSF (N-20).