

# G-CSFR (R12): sc-74026

## BACKGROUND

The diverse biological activities of G-CSF are initiated by the binding of G-CSF to a specific receptor (G-CSFR) that belongs to the cytokine/hematopoietic receptor superfamily. In contrast to the majority of hematopoietic receptors that are activated through the formation of heteromeric complexes composed of  $\alpha$ ,  $\beta$  and sometimes  $\gamma$  subunits, G-CSFR proteins are believed to form homodimeric complexes upon ligand binding. Four distinct alternative splice variants of G-CSFR have been described, one of which exists as a soluble receptor protein. Although G-CSFR lacks consensus motifs in its cytoplasmic domains that are characteristic of kinase activities, certain sequences have been identified that are conserved among several members of the cytokine receptor superfamily. For example, the carboxy terminal regions of G-CSFR contain a domain, designated box 3, that is only shared with the IL-6R subunit, gp130.

## REFERENCES

1. Bazan, J.F. 1989. A novel family of growth factor receptors: a common binding domain in the growth hormone, Prolactin, erythropoietin and IL-6 receptors, and the p75 IL-2 receptor  $\beta$  chain. *Biochem. Biophys. Res. Commun.* 164: 788-795.
2. Larsen, A., et al. 1990. Expression cloning of human granulocyte colony-stimulating factor receptor: a structural mosaic of hematopoietin receptor, immunoglobulin, and Fibronectin domains. *J. Exp. Med.* 172: 1559-1570.
3. Fukunaga, R., et al. 1990. Three different mRNAs encoding human granulocyte colony-stimulating factor receptor. *Proc. Natl. Acad. Sci. USA* 87: 8702-8706.
4. Miyajima, A., et al. 1992. Cytokine receptors and signal transduction. *Annu. Rev. Immunol.* 10: 295-331.
5. Saito, M., et al. 1992. Molecular cloning of a murine IL-6 receptor-associated signal transducer, gp130, and its regulated expression *in vivo*. *J. Immunol.* 148: 4066-4071.
6. Cosman, D. 1993. The hematopoietin receptor superfamily. *Cytokine* 5: 95-106.
7. Ishizaka-Ikeda, E., et al. 1993. Signal transduction mediated by growth hormone receptor and its chimeric molecules with the granulocyte colony-stimulating factor. *Proc. Natl. Acad. Sci. USA* 90: 123-127.
8. Hiraoka, O., et al. 1994. Ligand binding domain of granulocyte colony-stimulating factor receptor. *J. Biol. Chem.* 269: 22412-22419.
9. Dong, F., et al. 1995. A point mutation in the granulocyte colony-stimulating factor receptor (G-CSF-R) gene in a case of acute myeloid leukemia results in the overexpression of a novel G-CSF-R isoform. *Blood* 85: 902-911.

## CHROMOSOMAL LOCATION

Genetic locus: CSF3R (human) mapping to 1p34.3.

## SOURCE

G-CSFR (R12) is a mouse monoclonal antibody raised against the extracellular domain of G-CSFR of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

## APPLICATIONS

G-CSFR (R12) is recommended for detection of G-CSFR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells); non cross-reactive with GM-CSFR $\alpha$ , GM-CSFR $\beta$  or M-CSFR.

Suitable for use as control antibody for G-CSFR siRNA (h): sc-40006, G-CSFR shRNA Plasmid (h): sc-40006-SH and G-CSFR shRNA (h) Lentiviral Particles: sc-40006-V.

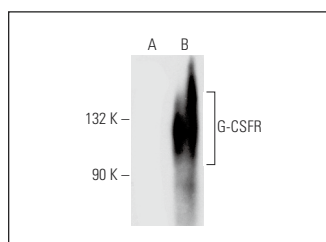
Molecular Weight of normal G-CSFR: 85-90 kDa.

Molecular Weight of glycosylated G-CSFR: 105-110 kDa.

Molecular Weight of heavily glycosylated G-CSFR: 130-135 kDa.

Positive Controls: G-CSFR (h): 293T Lysate: sc-116475.

## DATA



G-CSFR (R12): sc-74026. Western blot analysis of G-CSFR expression in non-transfected: sc-117752 (A) and human G-CSFR transfected: sc-116475 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. deBruin, C., et al. 2010. Most purported antibodies to the human granulocyte colony-stimulating factor receptor are not specific. *Exp. Hematol.* 38: 1022-1035.
2. Dannenmann, B., et al. 2021. iPSC modeling of stage-specific leukemogenesis reveals BAALC as a key oncogene in severe congenital neutropenia. *Cell Stem Cell* 28: 906-922.e6.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## RESEARCH USE

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