

CSF3R/G-CSFR Protein, Human, Recombinant (His)

General Information

Synonyms:	CSF3R;GCSFR;colony stimulating factor 3 receptor (granulocyte);G-CSF R;CD114
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Pro 621) of human G-CSF receptor (NP_000751.1) precursor was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Glu 25
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q99062-1
Molecular Weight:	68 kDa (predicted); 92 kDa (reducing condition, due to glycosylation)
AA Sequence:	ECGHISVSAPIVHLGDPITASCIKQNCSHLDPEPQILWRLGAELQPGGRQQRSLSDGTQESIITLPHLNHTQAFL SCCLNWGNSLQILDQVELRAGYPPAIPHNLSCLMNLTSSLICQWEPGPETHLPTSFTLKSFKSRGNCQTQGD SILDCVPKDGQSHCCIPRKHLLLYQNMGIWVQAENALGTSMSQPQLCLDPMDDVVKLEPPMLRTMDPSPEAAP PQAGCLQLCWEPWQPGLHINQKCELRHQPQRGEASWALVGPLPLEALQYELCGLLPATAYTLQIRCIRWPLP GHWSDWSPSLELRTERAPTIVRLDTWWRQRQLDPRTVQLFWKPVPLEEDSGRIQGYVVSWRPSGQAGAILP LCNTELSCTFHLPSAEQVALVAYNSAGTSRPTPVFSESRRPALTRLHAMARDPHSLVWGWEPNPWPQ GYVIEWGLGPPSASNSNKTWRMEQNGRATGFLLENIRPFQLYEIVTPLYQDTMGPSQHVYAYSQEMAPSH APELHLKHIGKTWAQLEWVPEPPELGSPLTHYIFWTNAQNQSFSAILNASSRGRFVLHGLEPASLYHIHLMA ASQAGATNSTVLTMLTTPAHHHHHHHHHH

QC Testing

Biological Activity:	Measured by its ability to inhibit the GCSF-induced proliferation of NFS60 mouse myeloid cells. The ED50 for this effect is typically 0.5-2ug/mL in the presence of 0.125ng/mL of recombinant human GCSF.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Granulocyte Colony Stimulating Factor Receptor (G-CSFR), also known as CD114, which belongs to the cytokine receptor superfamily, is a cell surface receptor for colony stimulating factor 3 (CSF3). It is a critical regulator of granulopoiesis. This type I membrane protein has a composite structure consisting of an immunoglobulin(Ig)-like domain, a cytokine receptor-homologous (CRH) domain and three fibronectin type III (FNIII) domains in the extracellular region. Mutations in the G-CSF receptor leading to carboxy-terminal truncation transduce hyperproliferative growth responses, and are implicated in the pathological progression of severe congenital neutropenia (SCN) to acute myelogenous leukemia (AML). Additionally, autocrine/paracrine stimulation of G-CSFR may be important in the biology of solid tumors, including metastasis.

Reference

- Kasper B, et al. (1999) Association of src-kinase Lyn and non-src-kinase Syk with the granulocyte colony-stimulating factor receptor (G-CSFR) is not abrogated in neutrophils from severe congenital neutropenia patients with point mutations in the G-CSFR mRNA. *Int J Hematol.* 70(4): 241-7.
- Hollenstein U, et al. (2000) Endotoxin down-modulates granulocyte colony-stimulating factor receptor (CD114) on human neutrophils. *J Infect Dis.* 182(1): 343-6.
- Kindwall-Keller TL, et al. (2008) Role of the proteasome in modulating native G-CSFR expression. *Cytokine.* 43(2): 114-23.
- Beel K, et al. (2009) G-CSF receptor (CSF3R) mutations in X-linked neutropenia evolving to acute myeloid leukemia or myelodysplasia. *Haematologica.* 94(10): 1449-52.

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