

## DESCRIPTION

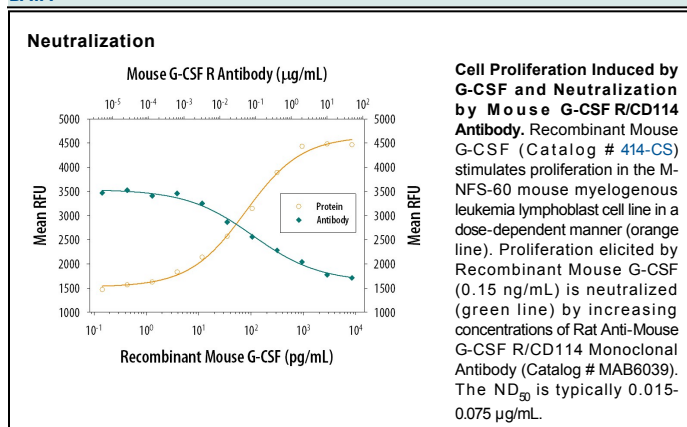
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse G-CSF R/CD114 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) G-CSF R, rhGM-CSF R beta, recombinant mouse (rm) GM-CSF R alpha, or rmM-CSF R is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2B</sub> Clone # 680206
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse G-CSF R/CD114 Cys26-Asp626 Accession # P40223
<b>Endotoxin Level</b>	<0.01 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

<b>Neutralization</b>	Measured by its ability to neutralize G-CSF-induced proliferation in the M-NFS-60 mouse myelogenous leukemia lymphoblast cell line. Shirafuji, N. <i>et al.</i> (1989) <i>Exp. Hematol.</i> <b>17</b> :116. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.015-0.075 µg/mL in the presence of 0.15 ng/mL Recombinant Mouse G-CSF.
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## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Sterile PBS to a final concentration of 0.5 mg/mL.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Granulocyte colony stimulating factor (G-CSF) is a pleiotropic cytokine best known for its specific effects on the proliferation, differentiation, and activation of hematopoietic cells of the neutrophilic and granulocyte lineage (1). G-CSF plays an important role in defense against infection, in inflammation and repair, and in the maintenance of steady state hematopoiesis. Cell activation by G-CSF is mediated by granulocyte colony stimulating factor receptor alpha (G-CSF R; also CD114), a 95-105 kDa type I transmembrane protein and member of the cytokine receptor superfamily, type I cytokine receptor family, and type 2 subfamily of receptor proteins. Mouse G-CSF R is synthesized as an 837 amino acid (aa) precursor that contains a 25 aa signal sequence, a 601 aa extracellular domain (ECD), a 24 aa transmembrane region, and a 187 aa cytoplasmic tail. The ECD contains one Ig-like C2-type domain, five fibronectin type-III domains, and 11 potential sites for N-linked glycosylation. Within the ECD there is also a WSXWS motif (aa 319-323) that is necessary for proper protein folding and thereby efficient intracellular transport and cell-surface receptor binding (2). Also, within the cytoplasmic domain there is a Box 1 motif which is required for JAK interaction and/or activation (1). Mouse G-CSF R shares 63% aa sequence identity with human G-CSF R. G-CSF R is expressed in mature neutrophils, neutrophilic precursors, myeloid leukemia cells, and placenta (1). Mutations have been found in the gene encoding G-CSF R in some patients with severe congenital neutropenia (1). These mutations typically lead to a truncation in the cytoplasmic domain of the G-CSF R leading to maturation arrest of neutrophilic precursors in the bone marrow and neutropenia in peripheral blood (3). Binding of G-CSF to its receptor induces dimerization or oligomerization of the receptor activating cytoplasmic tyrosine kinases (2). Signal transduction from pathways that involve Janus tyrosine kinases/signal transducer and activator of transcription proteins (Jak1, Jak2, and Tyk2/STAT3 and STAT6), src-related protein tyrosine kinases (Lyn and Syk), Ras/MAP kinase, and phosphatidylinositol have been reported to be activated upon G-CSF stimulation (4).

## References:

1. Ward, A.C. (2007) *Front. Biosci.* **12**:608.
2. Layton, J.E. and N.E. Hall (2006) *Front. Biosci.* **11**:3181.
3. Mitsui, T. *et al.* (2003) *Blood* **101**:2990.
4. Nicola, N.A. in *Cytokine Reference*, 2001, Oppenheim, J.J. and M. Feldmann, eds. Academic Press p.1935.