

#### DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse GM-CSF R $\alpha$ in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) GM-CSF R alpha or rhGM-CSF R beta is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 698423
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse GM-CSF R $\alpha$ Leu30-Pro327 Accession # Q00941
<b>Conjugate</b>	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

#### 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.

	Recommended Concentration	Sample
<b>Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	J774A.1 mouse reticulum cell sarcoma macrophage cell line

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

#### BACKGROUND

Granulocyte macrophage colony stimulating factor receptor alpha (GM-CSF R $\alpha$ ), also known as CD116, is a component of the receptor complex that mediates cellular responses to GM-CSF. GM-CSF promotes the differentiation and mobilization of granulocyte-macrophage, erythroid, megakaryocyte, and eosinophil progenitors. It enhances the activation of myeloid cell effector functions and plays a role in the development of Th1 biased immune responses, allergic inflammation, and autoimmunity (1-4). Mature mouse GM-CSF R $\alpha$  is an 80 kDa type I transmembrane glycoprotein that consists of a 298 amino acid (aa) extracellular domain (ECD) with two fibronectin type III domains and a juxtamembrane WSXWS motif, a 21 aa transmembrane segment, and a 40 aa cytoplasmic domain (5). Within the ECD, mouse GM-CSF R $\alpha$  shares approximately 33% and 58% aa sequence identity with human and rat GM-CSF R $\alpha$ , respectively. Soluble forms of the human receptor retain the ability to bind GM-CSF (6, 7). GM-CSF R $\alpha$  is expressed on hematopoietic stem cells, progenitor and differentiated cells in the myeloid lineage, vascular endothelial cells, placenta, and non-hematopoietic solid tumor cells (8). GM-CSF R $\alpha$  associates with the common beta chain/CD131 ( $\beta_c$ ), a 135 kDa transmembrane protein that is also the signal transducing component of the receptors for IL-3 and IL-5 (9, 10). Association with  $\beta_c$  converts GM-CSF R $\alpha$  from a low affinity to a high affinity receptor for GM-CSF (9-11). The shared usage of  $\beta_c$  underlies the synergism between GM-CSF, IL-3, and IL-5 in their effects on myeloid cell differentiation and activation (1, 2).

#### References:

- Martinez-Moczygemba, M. and D.P. Huston (2003) *J. Allergy Clin. Immunol.* **112**:653.
- Fleetwood, A.J. *et al.* (2005) *Crit. Rev. Immunol.* **25**:405.
- Eksioglu, E.A. *et al.* (2007) *Exp. Hematol.* **35**:1163.
- Cao, Y. (2007) *J. Clin. Invest.* **117**:2362.
- Park, L.S. *et al.* (1992) *Proc. Natl. Acad. Sci.* **89**:4295.
- Pelley, J.L. *et al.* (2007) *Exp. Hematol.* **35**:1483.
- Raines, M.A. *et al.* (1991) *Proc. Natl. Acad. Sci.* **88**:8203.
- Chiba, S. *et al.* (1990) *Cell Regul.* **1**:327.
- Kitamura, T. *et al.* (1991) *Proc. Natl. Acad. Sci.* **88**:5082.
- Hayashida, K. *et al.* (1990) *Proc. Natl. Acad. Sci.* **87**:9655.
- Hoang, T. *et al.* (1993) *J. Biol. Chem.* **268**:11881.

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