

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse GM-CSF R α in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) GM-CSF R alpha or rhGM-CSF R beta is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 698423
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse GM-CSF R α Leu30-Pro327 Accession # Q00941
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	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
Flow Cytometry	0.25-1 μ g/10 ⁶ cells	J774A.1 mouse reticulum cell sarcoma macrophage cell line

PREPARATION AND STORAGE

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

BACKGROUND

Granulocyte macrophage colony stimulating factor receptor alpha (GM-CSF R α), 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 α 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 α shares approximately 33% and 58% aa sequence identity with human and rat GM-CSF R α , respectively. Soluble forms of the human receptor retain the ability to bind GM-CSF (6, 7). GM-CSF R α 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 α associates with the common beta chain/CD131 (β_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 β_c converts GM-CSF R α from a low affinity to a high affinity receptor for GM-CSF (9-11). The shared usage of β_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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