

#### DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse Fc $\gamma$ RI in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant human (rh) Fc $\gamma$ RIA, rhFc $\gamma$ RIIB, or rhFc $\gamma$ RIIBB is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 290322
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	NS0-derived recombinant mouse Fc $\gamma$ RI extracellular domain Glu25-Pro297 Accession # P26151
<b>Conjugate</b>	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	RAW 264.7 mouse monocyte/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

Receptors for the Fc region of IgG (Fc $\gamma$  Rs) are members of the Ig superfamily that function in the activation or inhibition of immune responses such as degranulation, phagocytosis, ADCC (antibody-dependent cellular toxicity), cytokine release, and B cell proliferation (1-3). The Fc $\gamma$  Rs have been divided into three classes based on close relationships in their extracellular domains; these groups are designated Fc $\gamma$  RI (also known as CD64), Fc $\gamma$  RII (CD32), and Fc $\gamma$  RIII (CD16). Each group may be encoded by multiple genes and exist in different isoforms depending on species and cell type. The CD64 proteins are high affinity receptors (~10<sup>-8</sup>-10<sup>-9</sup> M) capable of binding monomeric IgG, whereas the CD16 and CD32 proteins bind IgG with lower affinities (~10<sup>-6</sup>-10<sup>-7</sup> M) only recognizing IgG aggregates surrounding multivalent antigens (1, 4). Fc $\gamma$  Rs that deliver an activating signal either have an intrinsic immunoreceptor tyrosine-based activation motif (ITAM) within their cytoplasmic domains or associate with one of the ITAM-bearing adapter subunits, Fc $\gamma$  R $\gamma$  or  $\zeta$  (3, 5). The only inhibitory member in human and mouse, Fc $\gamma$  RIIB, has an intrinsic cytoplasmic immunoreceptor tyrosine-based inhibitory motif (ITIM). The coordinated functioning of activating and inhibitory receptors is necessary for successful initiation, amplification, and termination of immune responses (5). Mouse Fc $\gamma$  RI is transmembrane protein with three extracellular Ig-like domains, and it delivers an activating signal via the associated Fc $\gamma$  R $\gamma$  accessory chain (1, 2). The high affinity recognition of IgG by Fc $\gamma$  RI permits the triggering of effector responses at low IgG concentrations typical of early immune responses (2). Fc $\gamma$  RI is expressed constitutively on monocytes and macrophages and can be induced on neutrophils and eosinophils (1, 4). Its expression is up-regulated during bacterial infections and sepsis.

#### References:

1. Van de Winkel, J. and P. Capes (1993) *Immunol. Today* **14**:215.
2. Raghaven, M. and P. Bjorkman (1996) *Annu. Rev. Cell Dev. Biol.* **12**:181.
3. Ravetch, J. and S. Bolland (2001) *Annu. Rev. Immunol.* **19**:275.
4. Takai, T. (2002) *Nature Rev. Immunol.* **2**:580.
5. Ravetch, J. and L. Lanier (2000) *Science* **290**:84.

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