

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human FcγRIIIB/CD16b in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant human FcγRIIA or recombinant mouse FcγRIII is observed. In flow cytometry of whole blood, recognition of FcγRIIIB on the granulocyte population, but not FcγRIIIA on NK cells, is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 245514
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human FcγRIIIB/CD16b Thr20-Gln208 Accession # O75015
<b>Conjugate</b>	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 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 µg/10 <sup>6</sup> cells	Human peripheral blood granulocytes

#### 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 (FcγR) are members of the Ig superfamily. Based on their genetic organization and molecular structure, three classes of human FcγRs: RI (CD64), RII (CD32), and RIII (CD16), which generate multiple isoforms, are recognized (1-3). These receptors function in the activation or inhibition of immune responses. The activating-type receptor either has, or associates non-covalently with an accessory subunit (FcγRγ or ζ chain) that has an immunoreceptor tyrosine-based activation motif (ITAM) in its cytoplasmic domain. In contrast, the inhibitory receptor (FcγRIIB) has a built-in immunoreceptor tyrosine-based inhibitory motif (ITIM) in its own cytoplasmic domain. FcγRI is a high-affinity receptor that binds monomeric IgG. Both FcγRII and RIII are low-affinity receptors that bind IgG in the form of immune complexes. Two genes for human FcγRIII, A and B, encoding a transmembrane receptor and a glycosylphosphatidylinositol (GPI) anchored protein, respectively, have been identified. Three allelic variants of FcγRIIIB, NA-1, NA-2, and SH, exist. A soluble form of FcγRIIIB corresponding to the extracellular region of the receptor is produced by proteolytic cleavage and circulates in plasma and other body fluids. The extracellular domains of FcγRIIIA and B share 97% amino acid sequence homology. Whereas FcγRIIIA is expressed on most effector cells of the immune system including macrophage, monocyte, NK cells, mast cells, eosinophils, dendritic cells, and Langerhans cells, FcγRIIIB is selectively expressed in neutrophils and eosinophils. Signaling through FcγRIIIA results in oxidative burst, cytokine release and phagocytosis by macrophages, antibody-dependent cellular cytotoxicity by natural killer cells and degranulation of mast cells. By contrast, FcγRIIIB is a decoy receptor that binds IgG complexes without triggering activation. Soluble FcγRIIIB has a regulatory role in inflammatory processes (4). It interacts with complement receptors CR3 and CR4 on monocytes to induce the production of pro-inflammatory cytokines.

#### References:

1. van de Winkel, J. and P. Capes (1993) Immunol. Today **14**:215.
2. Ravetch, J.V. and S. Bolland (2001) Annu. Rev. Immunol. **19**:275.
3. Takai, T. (2002) Nature Rev. Immunol. **2**:580.
4. Gauchat, G.J. *et al.* (1996) J. Immunol. **157**:1184.

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