Human Fcγ RIIIB/CD16b Alexa Fluor® 350-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 245514

Catalog Number: FAB1597U

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Fcγ RIIIB/CD16b in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant human Fcγ RIIA or recombinant mouse Fcγ RIII is observed. In flow cytometry of whole blood, recognition of Fcγ RIIIB on the granulocyte population, but not Fcγ RIIIA on NK cells, is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 245514
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Fcγ RIIIB/CD16b Thr20-Gln208 Accession # O75015
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 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 µg/10^6 cells	Human peripheral blood granulocytes

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.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Receptors for the Fc region of IgG (Fcγ R) are members of the Ig superfamily. Based on their genetic organization and molecular structure, three classes of human Fcγ Rs: 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 (FcRγ or ζ chain) that has an immunoreceptor tyrosine-based activation motif (ITAM) in its cytoplasmic domain. In contrast, the inhibitory receptor (Fcγ RIIB) has a built-in immunoreceptor tyrosine-based inhibitory motif (ITIM) in its own cytoplasmic domain. Fcγ RI is a high-affinity receptor that binds monomeric IgG. Both Fcγ RII and RIII are low-affinity receptors that bind IgG in the form of immune complexes. Two genes for human Fcγ RIII, A and B, encoding a transmembrane receptor and a glycosylphosphatidylinositol (GPI) anchored protein, respectively, have been identified. Three allelic variants of Fcγ RIIIB, NA-1, NA-2, and SH, exist. A soluble form of Fcγ RIIIB 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 Fcγ RIIIA and B share 97% amino acid sequence homology. Whereas Fcγ RIIIA is expressed on most effector cells of the immune system including macrophage, monocyte, NK cells, mast cells, eosinophils, dendritic cells, and Langerhans cells, Fcγ RIIIB is selectively expressed in neutrophils and eosinophils. Signaling through Fcγ RIIIA 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, Fcγ RIIIB is a decoy receptor that binds IgG complexes without triggering activation. Soluble Fcγ RIIIB 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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