Human CD23/Fcε RII Antibody

Monoclonal Mouse IgG_1 Clone # 138628

Catalog Number: MAB123

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD23/Fcε RII in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG_1 Clone # 138628
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CD23/Fcε RII Met150-Ser321 Accession # P06734
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

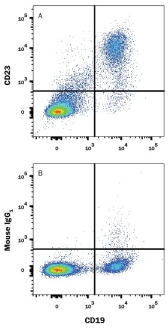
APPLICATIONS

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
Western Blot	1 µg/mL	Recombinant Human CD23/Fcε RII (Catalog # 123-FE)
Flow Cytometry	0.25 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Blockade of Receptor-ligand Interaction	In a functional ELISA, 0.5-2.5 µg/mL of this antibody will block 50% of the binding of 500 ng/mL of human IgE to immobilized Recombinant Human CD23/Fcε RII (Catalog # 123-FE) coated at 2 µg/mL (100 µL/well). At 20 µg/mL, this antibody will block >90% of the binding.	

DATA

Flow Cytometry



Detection of CD23/Fcε RII in Human Blood Lymphocytes by Flow Cytometry. Human peripheral blood lymphocytes were stained with Mouse Anti-Human CD19 APC-conjugated Monoclonal Antibody (Catalog # FAB4867A) and either (A) Mouse Anti-Human CD23/Fcε RII Monoclonal Antibody (Catalog # MAB123) or (B) Mouse IgG_1 Isotype Control (Catalog # MAB002) followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CD23 (also named B cell differentiation antigen) is a member of subgroup II of the C-type (Ca^{++}-dependent) lectin superfamily (1-5). Human CD23 is a 47 kDa type II transmembrane glycoprotein that is expressed by a wide variety of cell types (6-10). The full-length receptor is 321 amino acids (aa) in length and contains a 274 aa extracellular region, a 26 aa transmembrane segment, and a 21 aa cytoplasmic domain. The extracellular region contains a C-type lectin domain and a connecting stalk with coiled-coil topography (3, 11). The lectin domain binds both protein and carbohydrate in an apparently Ca^{++} independent manner (11). The coiled-coil region contributes to oligomerization (11, 12). The lectin domain in human CD23 (aa 162-284) is 64%, 62% and 68% aa identical to the lectin domains in mouse, rat and bovine CD23, respectively. In the cytoplasmic region, two FC isoforms exist which arise from alternate start sites (6, 12). The “a” (or long) isoform begins with the sequence MEEGQYS and is constitutively expressed by B cells. It is believed to participate in IgE-mediated endocytosis (13). The “b” (or short) isoform begins with MNPPSQ and is induced on a wide variety of cell types by IL-4 (6). Fcb reportedly contributes to IgE-mediated phagocytosis (13). Fcb expressing cells include eosinophils, monocytes, visceral smooth muscle and intestinal epithelium (6, 14, 15). At least four soluble forms of CD23 are known to exist. They range in molecular weight from 25 kDa to 37 kDa, with the 25 kDa form predominating in sera (16). Soluble CD23 (sFc) is generated by metalloprotease (ADAM8; ADAM15; ADAM28) and cysteine-protease activity (16-18). Cleavage usually occurs between aa 150-160 (7, 8). It is unclear if sequential metalloprotease-cysteine protease activity is necessary for the generation of all soluble forms. Both soluble and membrane-bound CD23 show bioactivity. Ligands for CD23 include CD21, IgE, CD11b, and CD11c (19-21). CD23 binding to CD11b and Cd11c on monocytes results in oxidative product generation and proinflammatory cytokine release (21). On B cells, sCD23 induces IgE secretion by binding CD21. Conversely, secreted IgE will, in turn, bind B cell membrane CD23, rendering it unavailable for cleavage, and thus shutting down IgE production (11).

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