Human Fcε RIα Antibody

Monoclonal Mouse IgG_{2B} Clone # 773704

Catalog Number: MAB6678

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Fcε RIα in direct ELISAs.
Source	Monoclonal Mouse IgG_{2B} Clone # 773704
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Fcε RIα Val26-Gln205 Accession # P12319
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.

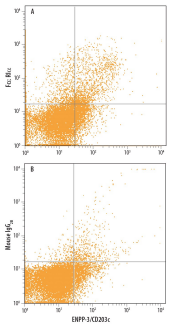
APPLICATIONS

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
Flow Cytometry	2.5 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.	
Neutralization	In a functional ELISA, 0.08-4 µg/mL of this antibody will block 50% of the binding of 300 ng/mL of human IgE to immobilized Recombinant Human Fcε RIα (Catalog # 6678-FC) coated at 2 µg/mL (100 µL/well). At 40 µg/mL, this antibody will block >90% of the binding.	

DATA

Flow Cytometry



Detection of Fcε RIα in Human blood cells by Flow Cytometry. Human peripheral blood cells were stained with Mouse Anti-Human ENPP-3/CD203c APC-conjugated Monoclonal Antibody (Catalog # FAB5756A) and either (A) Mouse Anti-Human Fcε RIα Monoclonal Antibody (Catalog # MAB6678) or (B) Mouse IgG_{2B} Isotype Control (Catalog # MAB0041) followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B).

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
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

The α subunit of the high affinity IgE receptor (Fcε RIα or FcεRIA) is an IgE-binding type I transmembrane glycoprotein of the multichain immune recognition (MIRR) family (1, 2). The receptor, Fcε RI, is a tetrameric complex of one α, one β and two γ subunits ($\alpha\beta\gamma_2$) on mast cells and basophils (1). An alternate trimeric form ($\alpha\gamma_2$) is expressed on human, but not rodent, mast cells, basophils, eosinophils and professional antigen presenting cells (3). While the γ subunit is essential for expression of Fcε RIα on the cell surface and for cell signaling, the β subunit, when present, increases the halflife of the Fcε RI complex on the cell surface (3, 4). An isoform of the β subunit, βT, blocks processing of the α subunit and its cell surface expression (2, 3, 5). Human Fcε RIα cDNA encodes 257 amino acids (aa) including a 25 aa signal sequence, a 180 aa extracellular domain containing two Ig-like domains that bind IgE and an endoplasmic reticulum retention motif, a 21 aa transmembrane domain with a charged amino acid (Asp219) that contributes to intracellular transport, and a 32 aa cytoplasmic sequence (1, 3, 6). Human Fcε RIα shares 50-62% aa sequence identity with mouse, rat, equine, ovine, bovine, porcine and canine Fcε RIα. Binding of IgE alone increases surface expression of Fcε RI, while crosslinking of IgE/Fcε RI complexes by IgE ligands (allergens) initiates receptor internalization and signaling (2, 4, 5). Mast cell and basophil activation by IgE/Fcε RI crosslinking causes degranulation, releasing histamine, leukotrienes, prostaglandins, and other mediators of immediate-type and late-phase allergic reactions. Circulating autoantibodies that crosslink Fcε RIα are often found in patients with chronic urticaria (7). Fcε RI on human antigen presenting cells mediates uptake and processing of allergens for presentation by class II MHC (2, 3). Fcε RI expression on human DC and Langerhans cells is up-regulated during allergic reactions (atopy) and correlates with serum IgE concentration (3).

References:

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