

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Fc ϵ RI α 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 Fc ϵ RI α Val26-Gln205 Accession # P12319
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied 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.

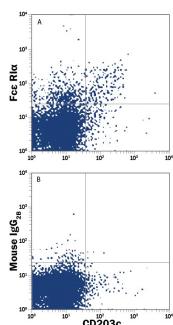
APPLICATIONS

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	10 μ L/10 ⁶ cells	See Below

DATA

Flow Cytometry



Detection of Fc ϵ RI α in Human Peripheral 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 Fc ϵ RI α PE-conjugated Monoclonal Antibody (Catalog # FAB6678P) or (B) Mouse IgG_{2B} Phycoerythrin Isotype Control (Catalog # IC0041P). View our protocol for [Staining Membrane-associated Proteins](#).

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

The α subunit of the high affinity IgE receptor (Fc ϵ RI α or Fc ϵ RIA) is an IgE-binding type I transmembrane glycoprotein of the multichain immune recognition (MIRR) family (1, 2). The receptor, Fc ϵ 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 Fc ϵ RI α on the cell surface and for cell signaling, the β subunit, when present, increases the halflife of the Fc ϵ RI complex on the cell surface (3, 4). An isoform of the β subunit, β T, blocks processing of the α subunit and its cell surface expression (2, 3, 5). Human Fc ϵ RI α 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 Fc ϵ RI α shares 50-62% aa sequence identity with mouse, rat, equine, ovine, bovine, porcine and canine Fc ϵ RI α . Binding of IgE alone increases surface expression of Fc ϵ RI, while crosslinking of IgE/Fc ϵ RI complexes by IgE ligands (allergens) initiates receptor internalization and signaling (2, 4, 5). Mast cell and basophil activation by IgE/Fc ϵ RI crosslinking causes degranulation, releasing histamine, leukotrienes, prostaglandins, and other mediators of immediate-type and late-phase allergic reactions. Circulating autoantibodies that crosslink Fc ϵ RI α are often found in patients with chronic urticaria (7). Fc ϵ RI on human antigen presenting cells mediates uptake and processing of allergens for presentation by class II MHC (2, 3). Fc ϵ 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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2. Abramson, J. and I. Pecht (2007) Immunol. Rev. **217**:231.
3. Kraft, S. and J-P. Kinet (2007) Nat. Rev. Immunol. **7**:365.
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6. Cauvi, D.M. *et al.* (2006) J. Biol. Chem. **281**:10448.
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