abcam

ab49434

FITC Anti-IgE antibody [BE5]

Anti-IgE antibody [BE5] conjugated to FITC - suitable for flow cytometry, and reacts with human samples. Clone [BE5] is a mouse monoclonal antibody.

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Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	FITC
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human IGHE. Database link P01854
Clone number	BE5
Purification technique	Size-exclusion chromatography
Concentration	0.1 - 1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	5 µg/mL
Notes	ab91356 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Target data

See full target information IGHE

Function

Constant region of immunoglobulin heavy chains. Immunoglobulins, also known as antibodies, are membrane-bound or secreted glycoproteins produced by B lymphocytes. In the recognition phase of humoral immunity, the membrane-bound immunoglobulins serve as receptors which, upon binding of a specific antigen, trigger the clonal expansion and differentiation of B lymphocytes into immunoglobulins-secreting plasma cells. Secreted immunoglobulins mediate the effector phase of humoral immunity, which results in the elimination of bound antigens (PubMed:20176268, PubMed:22158414). The antigen binding site is formed by the variable domain of one heavy chain, together with that of its associated light chain. Thus, each immunoglobulin has two antigen binding sites with remarkable affinity for a particular antigen. The variable domains are assembled by a process called V-(D)-J rearrangement and can then be subjected to somatic hypermutations which, after exposure to antigen and selection, allow affinity maturation for a particular antigen (PubMed:17576170, PubMed:20176268). Isoform 1. Constant region of secreted IgE, also known as the Fc region of IgE antibody. Mediates IgE effector functions on myeloid and lymphoid cells primarily via two Fc receptors, the high-affinity IgE Fc receptor complex/FCER1A:MS4A2:FCGR1A and the low-affinity FCER2 receptor, which upon antigen/allergen cross-linking initiate signaling pathways that lead to immune cell activation and differentiation (PubMed:2167225, PubMed:25629393, PubMed:33840121, PubMed:7544003, PubMed:8114916, PubMed:8551243). Triggers the immediate hypersensitivity response to allergens as a host defense mechanism against helminth parasites, pathogenic bacteria and venom toxicity. When dysregulated, it can elicit harmful life-threatening allergic and anaphylactic reactions (PubMed:25629393, PubMed:33840121, PubMed:7544003, PubMed:8114916, PubMed:8551243). Stimulates the high-affinity IgE Fc receptor complex/FCER1A:MS4A2:FCGR1A on mast cells, basophils and eosinophils leading to secretion of vasoactive amines, lipid mediators and cytokines that contribute to inflammatory response, tissue remodeling and cytotoxicity against microbes (PubMed:25629393, PubMed:8114916, PubMed:8551243). On macrophages, cross-linking of FCER2 by IgE immune complexes induces intracellular killing of parasites through activation of L-Arginine-nitric oxide pathway (PubMed:7544003). Activates macrophages to kill tumor cells via antigen-specific antibody-dependent cytotoxicity (ADCC). Triggers differentiation of quiescent M0 macrophages toward M1 state and reprograms M2 macrophages toward a proinflammatory state with antitumor functions (PubMed:30956175). Stimulates FCER2 on B cells and initiates IgE-dependent antigen uptake and presentation to T cells (PubMed:2167225). Isoform 2. Constant region of membrane-bound IgE (long mIgE), part of the B cell receptor complex (BCR). Upon antigen cross-linking triggers quick BCR signaling, ensuring survival of IgE-switched B cells and differentiation into plasma cells, thus regulating both primary and memory IgE responses. Isoform 3. Constant region of membrane-bound IgE (short mIgE), part of the B cell receptor complex (BCR). Upon

antigen cross-linking initiates slower but sustained BCR signaling that negatively regulates mature B cell proliferation.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

The purified antibody is conjugated with Fluorescein isothiocyanate (FITC) under optimum conditions. The reagent is free of unconjugated FITC.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The IgE protein [also known as immunoglobulin E] is a type of antibody with a molecular mass of approximately 190 kDa. IgE is expressed primarily on the surface of mast cells and basophils. It plays a central role in the immune system by binding to allergens and triggering the release of inflammatory mediators from mast cells and basophils. IgE's high-affinity binding to its receptor FcεRI on these effector cells facilitates this process. IgE's activity is central to initiating immediate hypersensitivity reactions which are a part of the body's immune response.
Biological function summary	The IgE protein functions as a mediator in allergic reactions. It does not operate as part of a complex but directly interacts with allergens and the IgE-specific receptors on immune cells. IgE's role is important in defense against parasitic infections where it performs a protective function by promoting eosinophil activation and degranulation. This action helps the body to expel the parasites. In the absence of parasitic infection IgE's function translates into its role in allergic responses where it becomes responsible for the symptoms associated with allergic diseases.
Pathways	IgE is an important player in the immune response pathway. The protein interacts with allergy-related pathways such as the T helper 2 (Th2) pathway. IgE's role in this pathway involves cooperation with cytokines notably IL-4 and IL-13 which are produced by Th2 cells and promote IgE synthesis in B cells. Also IgE is linked to the FcεRI receptor signaling pathway that initiates the release of histamines and other mediators when IgE binds to an allergen leading to an allergic response.
Associated diseases and disorders	IgE is closely linked to allergic conditions like asthma and allergic rhinitis. These conditions result from IgE-mediated inflammatory responses that affect the respiratory system. In asthma IgE antibodies play a role in airway inflammation

and hyperreactivity by promoting the activation of multiple immune cells including eosinophils and mast cells. IgE's involvement in allergic rhinitis manifests through similar mechanisms with nasal inflammation and irritation. IgE's interaction with other proteins such as histamine-releasing factor exacerbates these conditions by increasing the release of histamine which intensifies the allergic symptoms.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

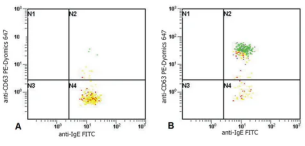
We do not recommend this combination. It is not covered by our product promise.

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Flow Cytometry - FITC Anti-IgE antibody [BE5] (ab49434)

IgE Flow Cytometry staining of stimulation of normal (heparin-treated) whole blood using mouse Anti-IgE antibody

Flow cytometry analysis of basophil activation upon stimulation of normal (heparin-treated) whole blood with combination of IL-3 and Goat anti-IgE polyclonal antibody. Combination of anti-human IgE (BE5) FITC and anti-human CD63 (MEM-259) PE-Dyomics 647 was used (analysis in basophil window).
A - staining of non-stimulated (control) sample
1B - staining of IgE stimulated sample

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