SANTA CRUZ BIOTECHNOLOGY, INC.

Fc ε RIβ (N-18): sc-33491

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The Power to Question

BACKGROUND

IgE Fc Receptor I binds to the Fc region of immunoglobulins ε chain with high affinity, and is responsible for initiating the allergic response. Binding of allergen to receptor-bound IgE leads to cell activation and the release of mediators such as histamines, responsible for the manifestations of allergy. IgE Fc Receptor I also induces the secretion of important lymphokines, effectors of the hypersensitivity response. It is a tetramer of a heavily glycosylated α chain, a β chain, and two disulfide linked γ chains. Structurally, the β chain contains four transmembrane regions with long cytoplasmic domains potentially involved in intracellular signaling. The cytoplasmic domains of the β and γ subunits each contain a conserved consesus sequence, ITAM, (immunoreceptor tyrosine activation motif). Phosphorylation of a pair of conserved tyrosine residues within this motif is required for signal transduction in mast cells and other hemopoietic cell types. A variant identified at Glu-237 of the β subunit has been implicated as a risk factor for atopic dermatitis and asthma.

REFERENCES

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2. Shimizu, A., et al. 1988. Human and rat mast cell high-affinity immunoglobulin E receptors: characterization of putative α-chain gene products. Proc. Natl. Acad. Sci. USA 85: 1907-1911.
3. Le Coniat, M., et al. 1990. The human genes for the α and γ subunits of the mast cell receptor for immunoglobulin E are located on human chromosome band 1q23. Immunogenetics 32: 183-186.
4. Kuster, H., et al. 1992. The gene and cDNA for the human high affinity immunoglobulin E receptor β chain and expression of the complete human receptor. J. Biol. Chem. 267: 12782-12787.
5. Maekawa, K., et al. 1992. Determination of the sequence coding for the β subunit of the human high-affinity IgE receptor. FEBS Lett. 302: 161-165.
6. Penhallow, R.C., et al. 1995. Temporal activation of nontransmembrane protein-tyrosine kinases following mast cell Fc ε RI engagement. J. Biol. Chem. 270: 23362-23365.
7. Gyimesi, E., et al. 2004. Basophil CD63 expression assay on highly sensitized atopic donor leucocytes-a useful method in chronic autoimmune urticaria. Br. J. Dermatol. 151: 388-396.
8. Taube, C., et al. 2004. Mast cells, Fc epsilon RI, and IL-13 are required for development of airway hyperresponsiveness after aerosolized allergen exposure in the absence of adjuvant. J. Immunol. 172: 6398-6406.
9. SWISS-PROT/TrEMBL (Q01362). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: MS4A2 (human) mapping to 11q12.1; Ms4a2 (mouse) mapping to 19 A.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SOURCE

Fc ε RIβ (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal cytoplasmic domain of Fc ε RIβ of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-33491 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

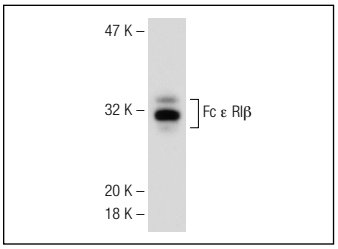
Fc ε RIβ (N-18) is recommended for detection of Fc ε RIβ of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Fc ε RIβ siRNA (m): sc-45265, Fc ε RIβ siRNA (h): sc-45264, Fc ε RIβ shRNA Plasmid (m): sc-45265-SH, Fc ε RIβ shRNA Plasmid (h): sc-45264-SH, Fc ε RIβ shRNA (m) Lentiviral Particles: sc-45265-V and Fc ε RIβ shRNA (h) Lentiviral Particles: sc-45264-V.

Molecular Weight of Fc ε RIβ: 33 kDa.

Positive Controls: RBL-1 whole cell lysate: sc-364790.

DATA



Fc ε RIβ (N-18): sc-33491. Western blot analysis of Fc ε RIβ expression in RBL-1 whole cell lysate.

RESEARCH USE

For research use only, not for use in diagnostic procedures.