SANTA CRUZ BIOTECHNOLOGY, INC.

Fc ε RIβ (H-5): sc-398863

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

1. Hackel, W., et al. 1968. Foreign body as cause of a large urethral calculus and diverticulum formation. Z. Urol. Nephrol. 61: 827-829.
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.

CHROMOSOMAL LOCATION

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

SOURCE

Fc ε RIβ (H-5) is a mouse monoclonal antibody raised against amino acids 111-235 mapping at the C-terminus of Fc ε RIβ of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Fc ε RIβ (H-5) is available conjugated to agarose (sc-398863 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398863 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398863 PE), fluorescein (sc-398863 FITC), Alexa Fluor® 488 (sc-398863 AF488), Alexa Fluor® 546 (sc-398863 AF546), Alexa Fluor® 594 (sc-398863 AF594) or Alexa Fluor® 647 (sc-398863 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398863 AF680) or Alexa Fluor® 790 (sc-398863 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

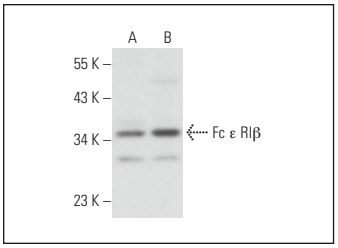
Fc ε RIβ (H-5) is recommended for detection of Fc ε RIβ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 (h): sc-45264, Fc ε RIβ siRNA (m): sc-45265, Fc ε RIβ shRNA Plasmid (h): sc-45264-SH, Fc ε RIβ shRNA Plasmid (m): sc-45265-SH, Fc ε RIβ shRNA (h) Lentiviral Particles: sc-45264-V and Fc ε RIβ shRNA (m) Lentiviral Particles: sc-45265-V.

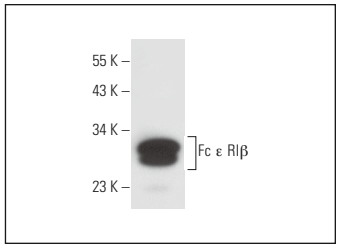
Molecular Weight of Fc ε RIβ: 33 kDa.

Positive Controls: RBL-1 whole cell lysate: sc-364790, Jurkat whole cell lysate: sc-2204 or WEHI-231 whole cell lysate: sc-2213.

DATA



Fc ε RIβ (H-5): sc-398863. Western blot analysis of Fc ε RIβ expression in WEHI-231 (**A**) and Jurkat (**B**) whole cell lysates.



Fc ε RIβ (H-5): sc-398863. Western blot analysis of Fc ε RIβ expression in RBL-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Ohmori, S., et al. 2019. GATA2 and PU.1 collaborate to activate the expression of the mouse Ms4a2 gene encoding Fc ε RIβ through distinct mechanisms. Mol. Cell. Biol. 39: e00314-19.
2. Sun, X., et al. 2019. Vasoactive intestinal peptide stabilizes intestinal immune homeostasis through maintaining interleukin-10 expression in regulatory B cells. Theranostics 9: 2800-2811.
3. Sharma, N., et al. 2019. SLAP is a negative regulator of FcεRI receptor-mediated signaling and allergic response. Front. Immunol. 10: 1020.
4. Kim, M., et al. 2021. MiR-154-5p-MCP1 axis regulates allergic inflammation by mediating cellular interactions. Front. Immunol. 12: 663726.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.