SANTA CRUZ BIOTECHNOLOGY, INC.

Fc ε RIβ (F-1): sc-393789

SANTA CRUZ BIOTECHNOLOGY

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

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 (mouse) mapping to 19 A.

SOURCE

Fc ε RIβ (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-21 within an N-terminal cytoplasmic domain 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 (F-1) is available conjugated to agarose (sc-393789 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393789 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393789 PE), fluorescein (sc-393789 FITC), Alexa Fluor® 488 (sc-393789 AF488), Alexa Fluor® 546 (sc-393789 AF546), Alexa Fluor® 594 (sc-393789 AF594) or Alexa Fluor® 647 (sc-393789 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393789 AF680) or Alexa Fluor® 790 (sc-393789 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393789 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Fc ε RIβ (F-1) is recommended for detection of Fc ε RIβ of mouse and rat 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 (m): sc-45265, Fc ε RIβ shRNA Plasmid (m): sc-45265-SH and Fc ε RIβ shRNA (m) Lentiviral Particles: sc-45265-V.

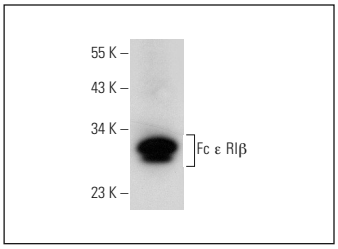
Molecular Weight of Fc ε RIβ: 33 kDa.

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

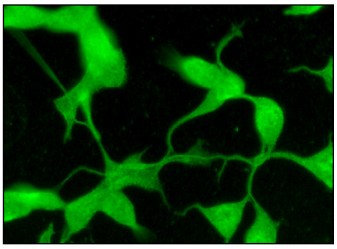
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Fc ε RIβ (F-1): sc-393789. Western blot analysis of Fc ε RIβ expression in RBL-1 whole cell lysate.



Fc ε RIβ (F-1): sc-393789. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane localization.

STORAGE

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

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.