SANTA CRUZ BIOTECHNOLOGY, INC.

Fc ε RIγ (F-1): sc-390221

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. The γ chains from Fc ε RI are also subunits of other Fc receptors. The γ subunit is thought to be functionally significant in allowing the IgE Fc receptor to reach the cell surface. 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.

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.
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. Pang, J., et al. 1993. Characterization of the gene for the human high affinity IgE receptor (Fc ε RI) α-chain. J. Immunol. 151: 6166-6174.
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-α useful method in chronic autoimmune urticaria. Br. J. Dermatol. 151: 388-396.
8. Taube, C., et al. 2004. Mast cells, Fc ε 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.

CHROMOSOMAL LOCATION

Genetic locus: FCER1G (human) mapping to 1q23.3; Fcer1g (mouse) mapping to 1 H3.

SOURCE

Fc ε RIγ (F-1) is a mouse monoclonal antibody raised against amino acids 1-86 representing full length Fc RIγ of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Fc ε RIγ (F-1) is recommended for detection of Fc ε RIγ 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), immunohistochemistry (including paraffin-embedded sections) (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 RIγ siRNA (h): sc-45267, Fc ε RIγ siRNA (m): sc-45268, Fc ε RIγ shRNA Plasmid (h): sc-45267-SH, Fc ε RIγ shRNA Plasmid (m): sc-45268-SH, Fc ε RIγ shRNA (h) Lentiviral Particles: sc-45267-V and Fc ε RIγ shRNA (m) Lentiviral Particles: sc-45268-V.

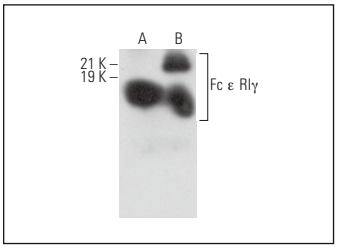
Molecular Weight of Fc ε RIγ: 9 kDa.

Positive Controls: human lung extract: sc-363767 or human bone marrow extract: sc-363752.

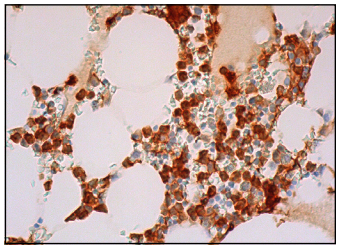
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Fc ε RIγ (F-1): sc-390221. Western blot analysis of Fc ε RIγ expression in human bone marrow (**A**) and human lung (**B**) tissue extracts.



Fc ε RIγ (F-1): sc-390221. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing membrane and cytoplasmic staining of hematopoietic cells.

STORAGE

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