SANTA CRUZ BIOTECHNOLOGY, INC.

Fc ε RIγ (A-5): sc-374335

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.

CHROMOSOMAL LOCATION

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

SOURCE

Fc ε RIγ (A-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 51-85 within a C-terminal cytoplasmic domain of Fc ε RIγ of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-374335 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Fc ε RIγ (A-5) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Fc ε RIγ (A-5) is also recommended for detection of Fc ε RIγ in additional species, including porcine.

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.

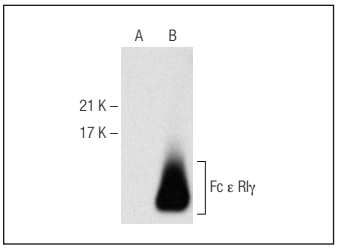
Molecular Weight of Fc ε RIγ: 9 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, CTLL-2 cell lysate: sc-2242 or Fc ε RIγ (h): 293T Lysate: sc-115131.

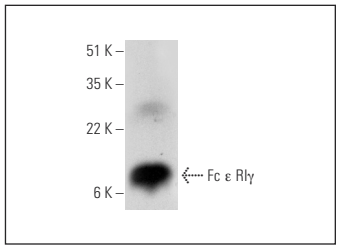
RECOMMENDED SUPPORT REAGENTS

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 RIγ (A-5): sc-374335. Western blot analysis of Fc ε RIγ expression in non-transfected: sc-117752 (**A**) and human Fc ε RIγ transfected: sc-115131 (**B**) 293T whole cell lysates.



Fc ε RIγ (A-5): sc-374335. Western blot analysis of Fc ε RIγ expression in THP-1 whole cell lysate.

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.