

Fc ϵ RI α siRNA (h): sc-45258

BACKGROUND

IgE Fc receptor I binds to the Fc region of immunoglobulin 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, β chain and two disulfide linked γ chains. The α chain is exposed to the outer surface of the cell and contains the IgE binding site. Expression of IgE Fc receptor mRNA appears to be highly specific and has been identified in Mast Cells and IL-3 dependent myeloid-monocyte precursor. Alternative splicing of the genomic transcript for the α chain has also been identified.

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 ϵ 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 ϵ are located on human chromosome band 1q23. *Immunogenetics* 32: 183-186.
4. Pang, J., et al. 1993. Characterization of the gene for the human high affinity IgE receptor (Fc ϵ RI) α chain. *J. Immunol.* 151: 6166-6164.
5. 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.
6. 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: 6398-406.
7. SWISS-PROT/TrEMBL (P12319). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: FCER1A (human) mapping to 1q23.2.

PRODUCT

Fc ϵ RI α siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Fc ϵ RI α shRNA Plasmid (h): sc-45258-SH and Fc ϵ RI α shRNA (h) Lentiviral Particles: sc-45258-V as alternate gene silencing products.

For independent verification of Fc ϵ RI α (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-45258A, sc-45258B and sc-45258C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Fc ϵ RI α siRNA (h) is recommended for the inhibition of Fc ϵ RI α expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Fc ϵ RI α (X-22): sc-100279 is recommended as a control antibody for monitoring of Fc ϵ RI α gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Fc ϵ RI α gene expression knockdown using RT-PCR Primer: Fc ϵ RI α (h)-PR: sc-45258-PR (20 μ l, 500 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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