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Fc ϵ RI α shRNA (h) Lentiviral Particles: sc-45258-V

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

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

CHROMOSOMAL LOCATION

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

PRODUCT

Fc ϵ RI α shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see Fc ϵ RI α siRNA (h): sc-45258 and Fc ϵ RI α shRNA Plasmid (h): sc-45258-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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

APPLICATIONS

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

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

Fc ϵ RI α (C-16): sc-33482 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 $55-60^\circ$ C and the extension temperature should be $68-72^\circ$ C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.