SANTA CRUZ BIOTECHNOLOGY, INC.

Fc ε RIα siRNA (r): sc-270639

BACKGROUND

IgE Fc Receptor I binds to the Fc region of immunoglobulins epsilon 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 alpha chain, a beta chain, and two disulfide linked gamma chains. Fc ε RIα (Fc fragment of IgE receptor Ia), also known as Iger01 or RATIGER01, is a 245 amino acid protein that exists as two alternatively spliced isoforms. Fc ε RIα isoform 1 is a single-pass type I membrane protein whereas Fc ε RIα isoform 2 is secreted. Release of norepinephrine from nerve terminals in the pineal gland and cAMP signaling pathway results in a 15 fold increase in expression of Fc ε RIα at night than during the day.

REFERENCES

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8. Ganguly, S., et al. 2007. Neural adrenergic/cyclic AMP regulation of the immunoglobulin E receptor α-subunit expression in the mammalian pinealocyte: a neuroendocrine/immune response link? J. Biol. Chem. 282: 32758-32764.
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CHROMOSOMAL LOCATION

Genetic locus: Fcer1a (rat) mapping to 13q24.

PROTOCOLS

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

PRODUCT

Fc ε RIα siRNA (r) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Fc ε RIα shRNA Plasmid (r): sc-270639-SH and Fc ε RIα shRNA (r) Lentiviral Particles: sc-270639-V as alternate gene silencing products.

For independent verification of Fc ε RIα (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270639A, sc-270639B and sc-270639C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Fc ε RIα siRNA (r) is recommended for the inhibition of Fc ε RIα expression in rat 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 µM in 66 µl. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Fc ε RIα gene expression knockdown using RT-PCR Primer: Fc ε RIα (r)-PR: sc-270639-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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