SANTA CRUZ BIOTECHNOLOGY, INC.

IL-13 siRNA (m): sc-39643

BACKGROUND

Interleukin-13, or IL-13, is a pleiotropic cytokine that exhibits 30% sequence identity with IL-4 and shares many of the same biological activities. Like IL-4, IL-13 affects monocytes, macrophages and B cells by upregulating the expression of CD23 and MHC proteins, and downregulating the expression of CD14. Both IL-4 and IL-13 are secreted by activated T lymphocytes and are powerful regulators of inflammation. Both inhibit the secretion of proinflammatory cytokines and chemokines from activated monocytes and stimulate the expression of IgE on activated B cells. IL-13 contains five Cysteine residues and multiple N-linked glycosylation sites and has been reported to inhibit the production of IL-2 in natural killer cells. IL-13 cDNA encodes a 131 amino acid precursor with a 20 amino acid signal peptide which is cleaved to generate a mature protein.

REFERENCES

1. Minty, A., et al. 1993. Interleukin-13 is a new human lymphokine regulating inflammatory and immune responses. Nature 362: 248-250.
2. Zurawski, G., et al. 1994. Interleukin 13 elicits a subset of the activities of its close relative interleukin 4. Stem Cells 12: 169-174.
3. Deleuran, B., et al. 1995. Interleukin 13 suppresses cytokine production and stimulates the production of 15-HETE in PBMC. A comparison between IL-4 and IL-13. Cytokine 7: 319-324.
4. Katz, Y., et al. 1995. IL-13 results in differential regulation of the complement proteins C3 and Factor B in tumour necrosis factor (TNF)-stimulated fibroblasts. Clin. Exp. Immunol. 101: 150-156.
5. Cosentino, G., et al. 1995. IL-13 down-regulates CD14 expression and TNFα secretion in normal human monocytes. J. Immunol. 155: 3145-3151.
6. de Vries, J.E., et al. 1995. Immunoregulatory properties of IL-13: its potential role in atopic disease. Int. Arch. Allergy Immunol. 106: 175-179.
7. Marietta, E.V., et al. 1996. Modulation of expression of the anti-inflammatory cytokines interleukin-13 and interleukin-10 by interleukin-3. Eur. J. Immunol. 26: 49-56.
8. Knackmuss, S., et al. 2007. Specific inhibition of interleukin-13 activity by a recombinant human single-chain immunoglobulin domain directed against the IL-13 receptor α1 chain. Biol. Chem. 388: 325-330.

CHROMOSOMAL LOCATION

Genetic locus: Il13 (mouse) mapping to 11 B1.3.

PRODUCT

IL-13 siRNA (m) 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 IL-13 shRNA Plasmid (m): sc-39643-SH and IL-13 shRNA (m) Lentiviral Particles: sc-39643-V as alternate gene silencing products.

For independent verification of IL-13 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39643A, sc-39643B and sc-39643C.

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

IL-13 siRNA (m) is recommended for the inhibition of IL-13 expression in mouse 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.

GENE EXPRESSION MONITORING

IL-13 (A-9): sc-393365 is recommended as a control antibody for monitoring of IL-13 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-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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-13 gene expression knockdown using RT-PCR Primer: IL-13 (m)-PR: sc-39643-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.

PROTOCOLS

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