

IL-13R α 1 siRNA (m): sc-63338

BACKGROUND

The Th2 cytokine interleukin-13 (IL-13) plays a critical role in allergen-induced airway hyper-responsiveness (AHR). Two different receptors exist for IL-13, designated IL-13R α 1 and 2. IL-13R α 1 exists as a heterodimer of IL-13R α 1 and IL-4R α as a signaling subunit, whereas IL-13R α 2 acts as a decoy receptor for IL-13. Furthermore, TNF α or IL-4 stimulation induces IL-13R α 2 upregulation, while IL-13R α 1 is constitutively expressed. Cell surface localization of IL-13R α 2 abrogates IL-13 signaling, thus IL-13 induced translocation of the receptor from the cytoplasm provides a mechanism for negative-feedback of IL-13 signaling. IL-13R α 1 expression is predominant in B cells, monocytes and T cells, whereas IL-13R α 2 expression is highest in glioma cells.

REFERENCES

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- Graber, P., et al. 1998. The distribution of IL-13 receptor α 1 expression on B cells, T cells and monocytes and its regulation by IL-13 and IL-4. *Eur. J. Immunol.* 28: 4286-4298.
- Wu, A.H., et al. 2002. Molecular cloning of the rat IL-13 α 2 receptor cDNA and its expression in rat tissues. *J. Neurooncol.* 59: 99-105.
- Park, J.W., et al. 2003. Respiratory syncytial virus-induced airway hyper-responsiveness is independent of IL-13 compared with that induced by allergen. *J. Allergy Clin. Immunol.* 112: 1078-1087.
- Yasunaga, S., et al. 2003. The negative-feedback regulation of the IL-13 signal by the IL-13 receptor α 2 chain in bronchial epithelial cells. *Cytokine* 24: 293-303.
- Yoshikawa, M., et al. 2003. TNF α and IL-4 regulate expression of IL-13 receptor α 2 on human fibroblasts. *Biochem. Biophys. Res. Commun.* 312: 1248-1255.

CHROMOSOMAL LOCATION

Genetic locus: IL13ra1 (mouse) mapping to X A3.3.

PRODUCT

IL-13R α 1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-13R α 1 shRNA Plasmid (m): sc-63338-SH and IL-13R α 1 shRNA (m) Lentiviral Particles: sc-63338-V as alternate gene silencing products.

For independent verification of IL-13R α 1 (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-63338A, sc-63338B and sc-63338C.

PROTOCOLS

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

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

IL-13R α 1 siRNA (m) is recommended for the inhibition of IL-13R α 1 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 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

IL-13R α 1 (D-2): sc-398831 is recommended as a control antibody for monitoring of IL-13R α 1 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 IL-13R α 1 gene expression knockdown using RT-PCR Primer: IL-13R α 1 (m)-PR: sc-63338-PR (20 μ l). 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.