SANTA CRUZ BIOTECHNOLOGY, INC.

IL-11Rα siRNA (h): sc-35647

BACKGROUND

The pleiotropic cytokine, IL-11, has been shown to have proliferative and differentiation effects on lymphopoietic, myeloid and erythroid cells. IL-11 also has the inhibiting effect of repressing adipogenesis *in vitro*. The IL-11α receptor, IL-11Rα, is a member of the class I subgroup of the cytokine receptor family and exhibits structural similarity to the α subunits of the human ciliary neurotrophic factor (CNTF) and the mouse IL-6 receptor. It is speculated that IL-11Rα regulates the proliferation and/or differentiation of skeletogenic progenitor and mesenchymal cells. For high affinity binding of IL-11 to IL-11Rα, coexpression of gp130 and IL-11α is necessary. It has also been found that coexpression of IL-11Rα and gp130 is required for proper stimulation of Ba/F3 cells to differentiate into macrophage in response to IL-11.

REFERENCES

1. Quesniaux, V.G., et al. 1993. Review of a novel hematopoietic cytokine, interleukin-11. Intl. Rev. Exp. Pathol. 34A: 205-214.
2. Keith, J.C., Jr., et al. 1994. IL-11, a pleiotropic cytokine: exciting new effects of IL-11 on gastrointestinal mucosal biology. Stem Cells 12: 79-89.
3. Neuhaus, H., et al. 1994. Et12, a novel putative type-1 cytokine receptor expressed during mouse embryogenesis at high levels in skin and cells with skeletogenic potential. Dev. Biol. 166: 531-542.
4. Hilton, D.J., et al. 1994. Cloning of a murine IL-11 receptor α-chain; requirement for gp130 for high-affinity binding and signal transduction. EMBO J. 13: 4765-4775.

CHROMOSOMAL LOCATION

Genetic locus: IL11RA (human) mapping to 9p13.3.

PRODUCT

IL-11Rα 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-11Rα shRNA Plasmid (h): sc-35647-SH and IL-11Rα shRNA (h) Lentiviral Particles: sc-35647-V as alternate gene silencing products.

For independent verification of IL-11Rα (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-35647A, sc-35647B and sc-35647C.

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-11Rα siRNA (h) is recommended for the inhibition of IL-11Rα 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 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-11Rα (4D12): sc-130920 is recommended as a control antibody for monitoring of IL-11Rα 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-11Rα gene expression knockdown using RT-PCR Primer: IL-11Rα (h)-PR: sc-35647-PR (20 µl, 307 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, T.M., et al. 2012. Interleukin-11 increases cell motility and up-regulates intercellular adhesion molecule-1 expression in human chondrosarcoma cells. J. Cell. Biochem. 113: 3353-3362.
2. Wei, J., et al. 2019. Bazedoxifene as a novel GP130 inhibitor for colon cancer therapy. J. Exp. Clin. Cancer Res. 38: 63.
3. Zhang, Z.G., et al. 2024. Inhibiting IL11RA to mitigate hepatic metastasis in skin cutaneous melanoma: comprehensive insights from *in vitro* and *in vivo* investigations. Skin Res. Technol. 30: e13618.

RESEARCH USE

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