SANTA CRUZ BIOTECHNOLOGY, INC.

IL-11 siRNA (h): sc-39636

BACKGROUND

Interleukin-11, or IL-11, is a pleiotropic cytokine that is biologically related to IL-6, leukemia inhibitory factor (LIF), oncostatin M (OSM) and ciliary neurotrophic factor (CNTF). IL-11 is a stromal cell-derived cytokine which stimulates the proliferation of primitive hematopoietic progenitor cells and, together with Flt 3-L, stimulates the expansion of $CD34^+$ cell populations. Human IL-11 cDNA encodes a 199 amino acid precursor with a 21 amino acid hydrophobic signal peptide which is cleaved to generate a glycosylated biologically active form. IL-11 exerts its biological effects through the interleukin-11 receptor, IL-11R, which is composed of an IL-11 receptor-specific chain designated IL-11Rα, and gp130, the signal transducing component common to the IL-6, LIF, OSM and CNTF receptors. Stimulation of the IL-11R results in the activation of the Janus tyrosine kinase family members JAK1 and JAK2 which, once activated, induce the nuclear translocation of the transcription factors Stat1 and Stat3.

REFERENCES

1. Paul, S.R., et al. 1990. Molecular cloning of a cDNA encoding interleukin-11, a stromal cell-derived lymphopoietic and hematopoietic cytokine. Proc. Natl. Acad. Sci. USA 87: 7512-7516.
2. Lemoli, R.M., et al. 1995. Interleukin-11 (IL-11) acts as a synergistic factor for the proliferation of human myeloid leukaemic cells. Br. J. Haematol. 91: 319-326.
3. van de Ven, C., et al. 1995. IL-11 in combination with SLF and G-CSF or GM-CSF significantly increases expansion of isolated $CD34^+$ cell population from cord blood vs. adult bone marrow. Exp. Hematol. 23: 1289-1295.

CHROMOSOMAL LOCATION

Genetic locus: IL11 (human) mapping to 19q13.42.

PRODUCT

IL-11 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-11 shRNA Plasmid (h): sc-39636-SH and IL-11 shRNA (h) Lentiviral Particles: sc-39636-V as alternate gene silencing products.

For independent verification of IL-11 (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-39636A, sc-39636B and sc-39636C.

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-11 siRNA (h) is recommended for the inhibition of IL-11 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-11 (A-9): sc-133063 is recommended as a control antibody for monitoring of IL-11 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-11 gene expression knockdown using RT-PCR Primer: IL-11 (h)-PR: sc-39636-PR (20 µl, 600 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. Lim, J.H. 2014. Inhibition of the interleukin-11-Stat3 axis attenuates hypoxia-induced migration and invasion in MDA-MB-231 breast cancer cells. Korean J. Physiol. Pharmacol. 18: 391-396.
3. Yu, L., et al. 2018. MicroRNA-124a inhibits cell proliferation and migration in liver cancer by regulating interleukin-11. Mol. Med. Rep. 17: 3972-3978.

RESEARCH USE

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