SANTA CRUZ BIOTECHNOLOGY, INC.

IL-10 siRNA (m): sc-39635

BACKGROUND

Interleukin-10, or IL-10, is a 178 amino acid protein that is primarily secreted by TH2 clones. IL-10 has dual functions, the first of which is the suppression of cytokine production by TH1 clones responding to antigen presented by monocyte and macrophage antigen presenting cells (APCs). The second function consists of the inhibition of response of cytokine targeted cells, possibly by the downregulation of CD25 (the IL-2 receptor) on macrophages and B lymphocytes. Human and murine IL-10 exhibit 81% sequence identity at the amino acid level and share 73% identity at the cDNA level. Both human and murine IL-10 are acid-liable and exist as non-covalently-linked homodimers in solution. IL-10 exerts its biological activity through the IL-10 receptor (IL-10R), a glycoprotein whose expression can be induced in cultured macrophages and fibroblasts by lipopolysaccharide (LPS) stimulation. IL-10 expression has been shown to be elevated in HIV-1 infected individuals and has been implicated in the progression of the disease.

REFERENCES

1. Feng, L., et al. 1993. Molecular cloning of rat cytokine synthesis inhibitory factor (IL-10) cDNA and expression in spleen and macrophages. Biochem. Biophys. Res. Commun. 192: 452-458.
2. Cohen, S.B., et al. 1994. IL-10 enhances expression of the IL-2 receptor α chain on T cells. Immunology 83: 329-332.

CHROMOSOMAL LOCATION

Genetic locus: Il10 (mouse) mapping to 1 E4.

PRODUCT

IL-10 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-10 shRNA Plasmid (m): sc-39635-SH and IL-10 shRNA (m) Lentiviral Particles: sc-39635-V as alternate gene silencing products.

For independent verification of IL-10 (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-39635A, sc-39635B and sc-39635C.

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-10 siRNA (m) is recommended for the inhibition of IL-10 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-10 (A-2): sc-365858 is recommended as a control antibody for monitoring of IL-10 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-10 gene expression knockdown using RT-PCR Primer: IL-10 (m)-PR: sc-39635-PR (20 µl, 486 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kothari, P., et al. 2014. IL-6-mediated induction of matrix metalloproteinase-9 is modulated by JAK-dependent IL-10 expression in macrophages. J. Immunol. 192: 349-357.
2. Uddin, M.J., et al. 2015. Carbon monoxide inhibits Tenascin-C mediated inflammation via IL-10 expression in a septic mouse model. Mediators Inflamm. 2015: 613249.
3. Hop, H.T., et al. 2018. Interleukin 10 suppresses lysosome-mediated killing of *Brucella abortus* in cultured macrophages. J. Biol. Chem. 293: 3134-3144.
4. Chen, M., et al. 2020. Tanshinone IIA promotes M2 microglia by ERβ/IL-10 pathway and attenuates neuronal loss in mouse TBI model. Neuropsychiatr. Dis. Treat. 16: 3239-3250.
5. Vu, S.H., et al. 2021. Prostaglandin I_2 (PGI_2) inhibits *Brucella abortus* internalization in macrophages via PGI_2 receptor signaling, and its analogue affects immune response and disease outcome in mice. Dev. Comp. Immunol. 115: 103902.
6. Jeljeli, M., et al. 2021. LPSlow-macrophages alleviate the outcome of graft-versus-host disease without aggravating lymphoma growth in mice. Front. Immunol. 12: 670776.

RESEARCH USE

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