SANTA CRUZ BIOTECHNOLOGY, INC.

IL-27Rα siRNA (h): sc-60836

BACKGROUND

IL-27 is a heterodimeric cytokine that consists of EBI3, an IL-12p40-related protein, and p28, a IL-12p35-related polypeptide. IL-27 triggers expansion of antigen-specific naive CD4-positive T cells and promotes polarization towards a Th1 phenotype with expression of γ-interferon. IL-27 contributes to the development of an adaptive immune response through its action on CD4-positive T cells, and also directly acts on cells of the innate immune system. IL-27 protein levels increase upon activation of antigen-presenting cells. IL-27 protein induces orphan cytokine receptor IL-27R (WSX-1)-dependent clonal expansion of naive but not memory $CD4^+$ T cells. IL-27 signaling through IL-27R and gp130 also induces phosphorylation of Stat1-5.

REFERENCES

1. Pflanz, S., et. al. 2002. IL-27, a heterodimeric cytokine composed of EBI3 and p28 protein, induces proliferation of naive $CD4^+$ T cells. Immunity 16: 779-790.
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3. Lucas, S., et al. 2003. IL-27 regulates IL-12 responsiveness of naive $CD4^+$ T cells through Stat1-dependent and -independent mechanisms. Proc. Natl. Acad. Sci. USA 100: 15047-15052.
4. Villarino, A.V., et al. 2004. Understanding the pro- and anti-inflammatory properties of IL-27. J. Immunol. 173: 715-720.
5. Goldberg, R., et al. 2004. Suppression of ongoing adjuvant-induced arthritis by neutralizing the function of the p28 subunit of IL-27. J. Immunol. 173: 1171-1178.
6. Yoshimoto, T., et al. 2004. Induction of IgG_{2a} class switching in B cells by IL-27. J. Immunol. 173: 2479-2485.
7. Artis, D., et al. 2004. The IL-27 receptor (WSX-1) is an inhibitor of innate and adaptive elements of type 2 immunity. J. Immunol. 173: 5626-5634.
8. Holscher, C., et al. 2005. The IL-27 receptor chain WSX-1 differentially regulates antibacterial immunity and survival during experimental tuberculosis. J. Immunol. 174: 3534-3544.

CHROMOSOMAL LOCATION

Genetic locus: IL27RA (human) mapping to 19p13.12.

PRODUCT

IL-27Rα 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-27Rα shRNA Plasmid (h): sc-60836-SH and IL-27Rα shRNA (h) Lentiviral Particles: sc-60836-V as alternate gene silencing products.

For independent verification of IL-27Rα (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-60836A, sc-60836B and sc-60836C.

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-27Rα siRNA (h) is recommended for the inhibition of IL-27Rα 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-27Rα (F-7): sc-376309 is recommended as a control antibody for monitoring of IL-27Rα 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-27Rα gene expression knockdown using RT-PCR Primer: IL-27Rα (h)-PR: sc-60836-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.