



IL-17R siRNA (h): sc-40037

BACKGROUND

Cytokines are small, soluble proteins with pleiotropic effects on a variety of cell types. Cytokines have a regulatory function over the immune system and mediate aspects of inflammatory response. They exert their biological effects through the binding of membrane-bound receptors which, in turn, initiate signal transduction cascades and elicit physiological changes in their target cell. Interleukin-17 (IL-17) and its cognate receptor, IL-17R, are an example of such a cytokine receptor pair. Originally identified as a rodent cDNA termed CTLA8, IL-17 is capable of inducing the secretion of IL-6 and IL-8 and augmenting the expression of ICAM-1 in human fibroblast cultures. The IL-17 protein exhibits a striking degree of homology with the HSV13 protein which mimics its function. The IL-17 receptor is a type I transmembrane protein of 864 amino acids in length, that is highly expressed in spleen and kidney.

REFERENCES

1. Rouvier, E., et al. 1993. CTLA-8, cloned from an activated T cell, bearing AU-rich messenger RNA instability sequences, and homologous to a herpesvirus saimiri gene. *J. Immunol.* 150: 5445-5456.
2. Arend, W.P., et al. 1994. Binding of IL-1 α , IL-1 β , and IL-1 receptor antagonist by soluble IL-1 receptors and levels of soluble IL-1 receptors in synovial fluids. *J. Immunol.* 153: 4766-4774.
3. Okamura, H., et al. 1995. Cloning of a new cytokine that induces IFN- γ production by T cells. *Nature* 378: 88-91.

CHROMOSOMAL LOCATION

Genetic locus: IL17RA (human) mapping to 22q11.1.

PRODUCT

IL-17R 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-17R shRNA Plasmid (h): sc-40037-SH and IL-17R shRNA (h) Lentiviral Particles: sc-40037-V as alternate gene silencing products.

For independent verification of IL-17R (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-40037A, sc-40037B and sc-40037C.

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-17R siRNA (h) is recommended for the inhibition of IL-17R 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 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-17R (G-9): sc-376374 is recommended as a control antibody for monitoring of IL-17R 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-17R gene expression knockdown using RT-PCR Primer: IL-17R (h)-PR: sc-40037-PR (20 μ l, 584 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nakashima, T., et al. 2012. Impaired IL-17 signaling pathway contributes to the increased collagen expression in scleroderma fibroblasts. *J. Immunol.* 188: 3573-3583.
2. Luo, Z., et al. 2015. Overexpression and potential regulatory role of IL-17F in pathogenesis of chronic periodontitis. *Inflammation* 38: 978-986.
3. Wang, H., et al. 2019. IL-25 promotes Th2-type reactions and correlates with disease severity in the pathogenesis of oral lichen planus. *Arch. Oral Biol.* 98: 115-121.
4. Jin, B., et al. 2022. Defect of IL17 signaling, but not centrinone, inhibits the development of psoriasis and skin papilloma in mouse models. *Biomedicine* 10: 1976.
5. Jin, B., et al. 2024. SCF^{FBXW11} complex targets interleukin-17 receptor A for ubiquitin-proteasome-mediated degradation. *Biomedicine* 12: 755.

RESEARCH USE

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