SANTA CRUZ BIOTECHNOLOGY, INC.

IL-17 siRNA (m): sc-39650

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 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-1α, IL-1β, 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. Yao, Z., et al. 1995. Human IL-17: a novel cytokine derived from T cells. J. Immunol. 155: 5483-5486.

CHROMOSOMAL LOCATION

Genetic locus: Il17a (mouse) mapping to 1 A4.

PRODUCT

IL-17 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-17 shRNA Plasmid (m): sc-39650-SH and IL-17 shRNA (m) Lentiviral Particles: sc-39650-V as alternate gene silencing products.

For independent verification of IL-17 (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-39650A, sc-39650B and sc-39650C.

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-17 siRNA (m) is recommended for the inhibition of IL-17 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-17 (G-4): sc-374218 is recommended as a control antibody for monitoring of IL-17 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-17 gene expression knockdown using RT-PCR Primer: IL-17 (m)-PR: sc-39650-PR (20 µl, 402 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chang, Y., et al. 2014. Genetic deletion of IL-17A reduces cigarette smoke-induced inflammation and alveolar type II cell apoptosis. Am. J. Physiol. Lung Cell. Mol. Physiol. 306: L132-L143.
2. Ma, L., et al. 2015. Transplantation of mesenchymal stem cells ameliorates secondary osteoporosis through interleukin-17-impaired functions of recipient bone marrow mesenchymal stem cells in MRL/lpr mice. Stem Cell Res. Ther. 6: 104.
3. Zhang, B., et al. 2017. IL-17A enhances microglial response to OGD by regulating p53 and PI3K/Akt pathways with involvement of ROS/HMGB1. Front. Mol. Neurosci. 10: 271.
4. Wei, C., et al. 2023. Exogenous spermidine alleviates diabetic myocardial fibrosis via suppressing inflammation and pyroptosis in db/db mice. Balkan Med. J. 40: 333-343.

RESEARCH USE

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