SANTA CRUZ BIOTECHNOLOGY, INC.

IL-21R siRNA (m): sc-40054

BACKGROUND

The IL-21 receptor (also designated IL-21R, NILR or novel interleukin receptor) is a type I cytokine receptor that forms a complex with the cytokine receptor γ chain, γ_c, and mediates IL-21 signaling. IL-21R is present on the surface of natural killer, B and T cell populations with high levels in spleen and thymus. IL-21 and IL-21R influence lymphoid proliferation and early lymphoid development in the transition between innate and adaptive immunity. Tumor necrosis factor (TNF) upregulates IL-21R, and combinations of TNF and IL-21 can have synergistic effects on myeloma cell proliferation through pathways involving phosphorylation of JAK1, Stat3, and Erk1/2. The human IL-21R gene maps to chromosome 16p12.1 and encodes a 538 amino acid protein that is closely related to human IL2RB and shares 62% sequence identity to mouse Il21r.

REFERENCES

1. Parrish-Novak, J., et al. 2000. Interleukin 21 and its receptor are involved in NK cell expansion and regulation of lymphocyte function. Nature 408: 57-63.
2. Asao, H., et al. 2001. Cutting edge: the common γ-chain is an indispensable subunit of the IL-21 receptor complex. J. Immunol. 167: 1-5.
3. Vosshenrich, C.A., et al. 2001. Cytokines: IL-21 joins the γ_c-dependent network? Curr. Biol. 11: R175-R177.
4. Habib, T., et al. 2002. The common γ chain (γ c) is a required signaling component of the IL-21 receptor and supports IL-21-induced cell proliferation via JAK3. Biochemistry 41: 8725-8731.
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6. Ueda, C., et al. 2002. The gene for interleukin-21 receptor is the partner of BCL6 in t(3;16)(q27;p11), which is recurrently observed in diffuse large B-cell lymphoma. Oncogene 21: 368-376.
7. Brenne, A.T., et al. 2002. Interleukin-21 is a growth and survival factor for human myeloma cells. Blood 99: 3756-3762.
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CHROMOSOMAL LOCATION

Genetic locus: Il21r (mouse) mapping to 7 F3.

PRODUCT

IL-21R 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-21R shRNA Plasmid (m): sc-40054-SH and IL-21R shRNA (m) Lentiviral Particles: sc-40054-V as alternate gene silencing products.

For independent verification of IL-21R (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-40054A, sc-40054B and sc-40054C.

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-21R siRNA (m) is recommended for the inhibition of IL-21R 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-21R (H-11): sc-137120 is recommended as a control antibody for monitoring of IL-21R 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-21R gene expression knockdown using RT-PCR Primer: IL-21R (m)-PR: sc-40054-PR (20 µl, 548 bp). 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.