

IL-2R β siRNA (h): sc-35654

BACKGROUND

The IL-2 receptor is a multicomponent complex consisting of three subunits, α , β and γ , each of which is required for high affinity binding of IL-2. The α chain functions primarily in binding IL-2, whereas the β and γ chains contribute to IL-2 binding and are essential to IL-2-induced activation of signaling pathways leading to T cell growth. Both IL-4R and IL-7R were initially described as single chain high affinity ligand binding cytokine receptors. However, it is now well established that the IL-2R γ chain functions as a second subunit of the high affinity IL-4R and IL-7R receptors. Consequently, the originally described subunits of these latter receptors are now referred to as IL-4R α and IL-7R α respectively, while the common subunit is referred to as γ c. Although the common γ chain enhances ligand binding in these three cytokine receptors, it has no capacity to bind these ligands on its own. There is evidence that the γ chain is also a subunit of IL-13R.

REFERENCES

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2. Tanaka, T., et al. 1991. A novel monoclonal antibody against murine IL-2 receptor β -chain. Characterization of receptor expression in normal lymphoid cells and EL-4 cells. *J. Immunol.* 147: 2222-2228.
3. Cao, X., et al. 1993. γ chain: chromosomal mapping and tissue specificity of IL-2R γ chain expression. *Proc. Natl. Acad. Sci. USA* 90: 8464-8468.
4. Minami, Y., et al. 1993. The IL-2 receptor complex: its structure, function, and target genes. *Annu. Rev. Immunol.* 11: 245-268.
5. Taniguchi, T., et al. 1993. The IL-2/IL-2 receptor system: a current overview. *Cell* 73: 5-8.
6. Kondo, M., et al. 1994. Sharing of the interleukin-2 (IL-2) receptor γ chain between receptors for IL-2 and IL-4. *Science* 262: 1874-1877.
7. Russell, S.M., et al. 1994. Interleukin-2 receptor γ chain: a functional component of the interleukin-4 receptor. *Science* 262: 1880-1883.
8. He, Y.W., et al. 1995. Expression and function of the γ c subunit of the IL-2, IL-4, and IL-7 receptors. Distinct interaction of γ c in the IL-4 receptor. *J. Immunol.* 154: 1596-1605.

CHROMOSOMAL LOCATION

Genetic locus: IL2RB (human) mapping to 22q12.3.

PRODUCT

IL-2R β 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-2R β shRNA Plasmid (h): sc-35654-SH and IL-2R β shRNA (h) Lentiviral Particles: sc-35654-V as alternate gene silencing products.

For independent verification of IL-2R β (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-35654A, sc-35654B and sc-35654C.

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-2R β siRNA (h) is recommended for the inhibition of IL-2R β 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 60 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-2R β (C-2): sc-166427 is recommended as a control antibody for monitoring of IL-2R β 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-2R β gene expression knockdown using RT-PCR Primer: IL-2R β (h)-PR: sc-35654-PR (20 μ l). 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.