SANTA CRUZ BIOTECHNOLOGY, INC.

IL-1RII siRNA (m): sc-72043

BACKGROUND

Decoy receptors are structurally incapable of activating signaling pathways, but act as anti-inflammatory agents by sequestering agonists for actual signaling complexes. The type II IL-1 receptor (IL-1RII) acts as a decoy receptor for the chemokine interleukin-1 (IL-1). Additionally, the soluble form of IL-1R accessory protein (IL-1RAcP) increases the affinity of binding of IL-1α and IL-1β to IL-1RII 100-fold, but does not increase the affinity for another anti-inflammatory agent, IL-1R antagonist (IL-1Ra). The end result is a complex regulatory mechanism for IL-1 activated inflammation, whereby dexamethasone and other molecules inducing IL-1RII, function in an immunosupressive and anti-inflammatory manner.

REFERENCES

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2. McMahan, C.J., et al. 1991. A novel IL-1 receptor, cloned from B cells by mammalian expression, is expressed in many cell types. EMBO J. 10: 2821-2832.
3. Dower, S.K., et al. 1992. The interleukin-1 system: receptors, ligands and signals. Chem. Immunol. 51: 33-64.
4. Slack, J., et al. 1993. Independent binding of interleukin-1α and interleukin-1β to type I and type II IL-1 receptors. J. Biol. Chem. 268: 2513-2524.
5. Sims, J.E., et al. 1993. Interleukin-1 signaling occurs exclusively via the type I receptor. Proc. Natl. Acad. Sci. USA 90: 6155-6159.
6. 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.
7. Giri, J.G., et al. 1994. Elevated levels of shed type II IL-1 receptor in sepsis. Potential role for type II receptor in regulation of IL-1 responses. J. Immunol. 153: 5802-5809.
8. Re, F., et al. 1994. The type II "receptor" as a decoy target for interleukin 1 in polymorphonuclear leukocytes: characterization of induction by dexamethasone and ligand binding properties of the released decoy receptor. J. Exp. Med. 179: 739-743.
9. Mantovani, A., et al. 2001. Decoy receptors: a strategy to regulate inflammatory cytokines and chemokines. Trends Immunol. 22: 328-336.

CHROMOSOMAL LOCATION

Genetic locus: Il1r2 (mouse) mapping to 1 B.

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.

PRODUCT

IL-1RII 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-1RII shRNA Plasmid (m): sc-72043-SH and IL-1RII shRNA (m) Lentiviral Particles: sc-72043-V as alternate gene silencing products.

For independent verification of IL-1RII (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-72043A, sc-72043B and sc-72043C.

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-1RII siRNA (m) is recommended for the inhibition of IL-1RII 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-1RII gene expression knockdown using RT-PCR Primer: IL-1RII (m)-PR: sc-72043-PR (20 µl, 585 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.