

# IL-1RI siRNA (m): sc-35652

## BACKGROUND

Three structurally related ligands for IL-1Rs have been described. These include two agonists, IL-1 $\alpha$  and IL-1 $\beta$ , and a specific receptor antagonist, IL-1R $\alpha$ . Among the activities regulated by IL-1 are fever, acute phase responses, degradation of connective tissue and immunostimulatory activities. The IL-1R $\alpha$  molecule also binds specifically to IL-1Rs, but fails to initiate intracellular responses. Two distinct IL-1Rs have been identified, each of which belongs to the Ig superfamily and is widely expressed in a broad range of cells and tissues. Although many cell types co-express type I and type II receptors, there is no evidence that these constitute subunits of a single complex. The type II receptor has a short 29 amino acid cytoplasmic domain that does not seem sufficient for signaling while in fact there is considerable evidence arguing that IL-1 signals exclusively through the type I IL-1R.

## REFERENCES

1. Sims, J.E., et al. 1989. Cloning of the interleukin-1 receptor from human T cells. *Proc. Natl. Acad. Sci. USA* 86: 8946-8950.
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-1 $\alpha$  and interleukin-1 $\beta$  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-1 $\alpha$ , IL-1 $\beta$  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.

## CHROMOSOMAL LOCATION

Genetic locus: IL1R1 (mouse) mapping to 1 B.

## PRODUCT

IL-1RI 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-1RI shRNA Plasmid (m): sc-35652-SH and IL-1RI shRNA (m) Lentiviral Particles: sc-35652-V as alternate gene silencing products.

For independent verification of IL-1RI (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-35652A, sc-35652B and sc-35652C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

IL-1RI siRNA (m) is recommended for the inhibition of IL-1RI 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  $\mu$ M in 66  $\mu$ 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-1RI (H-8): sc-393998 is recommended as a control antibody for monitoring of IL-1RI 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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-1RI gene expression knockdown using RT-PCR Primer: IL-1RI (m)-PR: sc-35652-PR (20  $\mu$ l, 521 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Vecile, E., et al. 2013. Intracellular function of interleukin-1 receptor antagonist in ischemic cardiomyocytes. *PLoS ONE* 8: e53265.

## RESEARCH USE

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