

# IL-18R $\beta$ siRNA (h): sc-94362

## BACKGROUND

Interleukin-18 (IL-18) has been identified as a molecule that induces IFN- $\gamma$  production and enhances NK cell cytotoxicity. IL-18 receptor (IL-18R) is a type I membrane protein present in lung, leukocytes, spleen, liver, thymus, prostate, small intestine, colon, placenta and heart. IL-18R is absent from brain, skeletal muscle, pancreas and kidney. IL-18R is present in Hodgkin's disease cell lines, and does not bind IL-1 $\alpha$  or IL-1 $\beta$ . The association of IL-18 to IL-18R leads to activation of NF $\kappa$ B. At present two subunits of IL-18R have been characterized: IL-18R $\alpha$  and IL-18R $\beta$ . IL-18R $\alpha$  has been described as the ligand-binding chain and IL-18R $\beta$  as the signal-transduction chain.

## REFERENCES

1. Torigoe, K., et al. 1997. Purification and characterization of the human interleukin-18 receptor. *J. Biol. Chem.* 272: 25737-25742.
2. Asakawa, M., et al. 2005. Role of interleukin-18 and its receptor in hepatocellular carcinoma associated with hepatitis C virus infection. *Int. J. Cancer* 118: 564-570.
3. Strand, M.L., et al. 2005. Interleukin-18 is expressed in rat testis and may promote germ cell growth. *Mol. Cell. Endocrinol.* 240: 64-73.
4. Vermot-Desroches, C., et al. 2005. Monoclonal antibodies specific for the IL-18 receptor. *Cell. Immunol.* 236: 101-104.
5. Zhou, Y., et al. 2005. Enhanced expression of interleukin-18 receptor  $\alpha$  chain by CD4<sup>+</sup> T cells in sarcoidosis. *Chest* 128: 2497-2503.
6. Krasna, E., et al. 2005. IL-18 receptor expression on epithelial cells is upregulated by TNF  $\alpha$ . *Inflammation* 29: 33-37.

## CHROMOSOMAL LOCATION

Genetic locus: IL18RAP (human) mapping to 2q12.1.

## PRODUCT

IL-18R $\beta$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-18R $\beta$  shRNA Plasmid (h): sc-94362-SH and IL-18R $\beta$  shRNA (h) Lentiviral Particles: sc-94362-V as alternate gene silencing products.

For independent verification of IL-18R $\beta$  (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-94362A, sc-94362B and sc-94362C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20 $^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20 $^{\circ}$  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-18R $\beta$  shRNA Plasmid (h) is recommended for the inhibition of IL-18R $\beta$  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  $\mu$ 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-18R $\beta$  (48986): sc-80050 is recommended as a control antibody for monitoring of IL-18R $\beta$  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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-18R $\beta$  gene expression knockdown using RT-PCR Primer: IL-18R $\beta$  (h)-PR: sc-94362-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.