SANTA CRUZ BIOTECHNOLOGY, INC.

# IL-33 siRNA (h): sc-75333

## BACKGROUND

The interleukins (ILs) are a broad family of well characterized cytokines, primarily of hematopoietic cell origin. They are secreted by immune cells (mainly macrophages, B-cells or T-cells) that regulate a wide range of immune system functions. The specific functions of different interleukins vary from the regulation of inflammatory and immune responses to the regulation of other interleukins. IL-33 (interleukin 33), also known as DVS27, IL1F11, C9orf26 or NF-HEV, is a 270 amino acid secreted protein that belongs to the IL family. Expressed in tonsils and lymph nodes, IL-33 functions as a cytokine that is stimulated via interaction with ST2, an association that recruits a variety of proteins, including MyD88, IRAK-1 and TRAF6, and can also induce T helper-associated cytokine activity. IL-33 plays a role in the survival and adhesion of mast cells and may be involved in the control of endothelial cell activation.

## REFERENCES


1. Baekkevold, E.S., et al. 2003. Molecular characterization of NF-HEV, a nuclear factor preferentially expressed in human high endothelial venules. Am. J. Pathol. 163: 69-79.
2. Hayakawa, H., et al. 2007. Soluble ST2 blocks interleukin-33 signaling in allergic airway inflammation. J. Biol. Chem. 282: 26369-26380.
3. Sanada, S., et al. 2007. IL-33 and ST2 comprise a critical biomechanically induced and cardioprotective signaling system. J. Clin. Invest. 117: 1538-1549.
4. Allakhverdi, Z., et al. 2007. Cutting edge: the ST2 ligand IL-33 potently activates and drives maturation of human mast cells. J. Immunol. 179: 2051-2054.


## CHROMOSOMAL LOCATION

Genetic locus: IL33 (human) mapping to 9p24.1.

## PRODUCT

IL-33 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-33 shRNA Plasmid (h): sc-75333-SH and IL-33 shRNA (h) Lentiviral Particles: sc-75333-V as alternate gene silencing products.

For independent verification of IL-33 (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-75333A, sc-75333B and sc-75333C.

## 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-33 siRNA (h) is recommended for the inhibition of IL-33 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 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-33 (4E9): sc-130625 is recommended as a control antibody for monitoring of IL-33 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-33 gene expression knockdown using RT-PCR Primer: IL-33 (h)-PR: sc-75333-PR (20 µl, 385 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Masamune, A., et al. 2010. Nuclear expression of interleukin-33 in pancreatic stellate cells. Am. J. Physiol. Gastrointest. Liver Physiol. 299: G821-G832.
2. Sun, M., et al. 2018. Gram-negative bacteria facilitate tumor progression through TLR4/IL-33 pathway in patients with non-small-cell lung cancer. Oncotarget 9: 13462-13473.
3. Zhou, Q., et al. 2020. The reciprocal interaction between tumor cells and activated fibroblasts mediated by TNF-$\alpha$/IL-33/ST2L signaling promotes gastric cancer metastasis. Oncogene 39: 1414-1428.
4. Wang, S., et al. 2020. The effects of interleukin-33 (IL-33) on osteosarcoma cell viability, apoptosis, and epithelial-mesenchymal transition are mediated through the PI3K/Akt pathway. Med. Sci. Monit. 26: e920766.


## 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.