

IL-33 siRNA (m): sc-75334

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.
5. Iikura, M., et al. 2007. IL-33 can promote survival, adhesion and cytokine production in human mast cells. *Lab. Invest.* 87: 971-978.
6. Küchler, A.M., et al. 2008. Nuclear interleukin-33 is generally expressed in resting endothelium but rapidly lost upon angiogenic or proinflammatory activation. *Am. J. Pathol.* 173: 1229-1242.
7. Palmer, G., et al. 2008. The IL-1 receptor accessory protein (AcP) is required for IL-33 signaling and soluble AcP enhances the ability of soluble ST2 to inhibit IL-33. *Cytokine* 42: 358-364.

CHROMOSOMAL LOCATION

Genetic locus: Il33 (mouse) mapping to 19 C1.

PRODUCT

IL-33 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-33 shRNA Plasmid (m): sc-75334-SH and IL-33 shRNA (m) Lentiviral Particles: sc-75334-V as alternate gene silencing products.

For independent verification of IL-33 (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-75334A, sc-75334B and sc-75334C.

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-33 siRNA (m) is recommended for the inhibition of IL-33 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 μ M in 66 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-33 gene expression knockdown using RT-PCR Primer: IL-33 (m)-PR: sc-75334-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gonciarz, W., et al. 2020. Proregenerative activity of IL-33 in gastric tissue cells undergoing *Helicobacter pylori*-induced apoptosis. *Int. J. Mol. Sci.* 21: 1801.
2. Gonciarz, W., et al. 2021. Interference of LPS *H. pylori* with IL-33-driven regeneration of caviae porcellus primary gastric epithelial cells and fibroblasts. *Cells* 10: 1385.

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.