SANTA CRUZ BIOTECHNOLOGY, INC.

# IL-1F7 siRNA (h): sc-94860

## BACKGROUND

IL-1 (Interleukin-1) is a cytokine responsible for initiating a variety of activities through the activation of transcription factors, NFκB and AP-1, thereby promoting host response to injury or infection. The IL-1 superfamily is comprised of several ligands and receptors. IL-1F7, also known as IL-1ζ, IL-1 homolog 4 (IL-1H4) or IL-1 related protein 1 (IL-1rp1), is a secreted ligand belonging to this superfamily. It is expressed in the cytoplasm of peripheral monocytic cells localizing to the inner surface of the plasma membrane and surrounding the nuclear membrane suggesting that IL-1F7 may play a role in immune regulation. Five isoforms exist for this protein due to alternative splicing and they are designated IL-1F7a through IL-1F7e. Isoform a has a distinct N-terminus while isoforms c-d are truncated. Isoform b is the mature functional isoform that binds to the IL-18Rα-chain and the IL-18 binding protein (IL-18BP) acting as an IL-18 antagonist. IL-1F7 is closely related to IL-1ra, sharing 36% sequence identity.

## REFERENCES


1. Bufler, P., et al. 2002. A complex of the IL-1 homologue IL-1F7b and IL-18-binding protein reduces IL-18 activity. Proc. Natl. Acad. Sci. USA 99: 13723-13728.
2. Kumar, S., et al. 2002. Interleukin-1F7B (IL-1H4/IL-1F7) is processed by caspase-1 and mature IL-1F7B binds to the IL-18 receptor but does not induce IFN-γ production. Cytokine 18: 61-71.
3. Nicklin, M.J., et al. 2002. A sequence-based map of the nine genes of the human interleukin-1 cluster. Genomics 79: 718-725.
4. Bufler, P., et al. 2004. Interleukin-1 homologues IL-1F7b and IL-18 contain functional mRNA instability elements within the coding region responsive to lipopolysaccharide. Biochem. J. 381: 503-510.
5. Dinarello, C.A. 2004. The IL-1 family and inflammatory diseases. Clin. Exp. Rheumatol. 20: S1-S13.


## CHROMOSOMAL LOCATION

Genetic locus: IL1F7 (human) mapping to 2q13.

## PRODUCT

IL-1F7 siRNA (h) is a pool of 2 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-1F7 shRNA Plasmid (h): sc-94860-SH and IL-1F7 shRNA (h) Lentiviral Particles: sc-94860-V as alternate gene silencing products.

For independent verification of IL-1F7 (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-94860A and sc-94860B.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## 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-1F7 siRNA (h) is recommended for the inhibition of IL-1F7 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-1F7 (6A6): sc-517072 is recommended as a control antibody for monitoring of IL-1F7 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-1F7 gene expression knockdown using RT-PCR Primer: IL-1F7 (h)-PR: sc-94860-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Zhan, Q., et al. 2017. IL-37 suppresses MyD88-mediated inflammatory responses in human aortic valve interstitial cells. Mol. Med. 23: 83-91.


## RESEARCH USE

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