SANTA CRUZ BIOTECHNOLOGY, INC.

# TIM-1 siRNA (h): sc-61691

## BACKGROUND

CD4+ T helper lymphocytes can be divided into types 1 (Th1) and 2 (Th2) on the basis of their cytokine secretion patterns. Th1 cells and their associated cytokines are involved in cell-mediated immunity to intracellular pathogens and delayed-type hypersensitivity reactions. Th2 cells are involved in the control of extracellular helminthic infections and the promotion of atopic and allergic diseases. T cell Ig- and mucin-domain-containing molecules (TIMs) are a family of molecules expressed on T cells. TIM-1 is a single-pass type I membrane protein that is associated with the development of Th2 biased immune responses and selectively expressed on Th2 cells. TIM-1, also designated hepatitis A virus cellular receptor-1 (HAVcr-1) or T cell membrane protein 1, acts as a cell-surface receptor for hepatitis A virus and may also play a role in asthma and allergic disease regulation. TIM-1 is a widely expressed protein with highest levels detected in testis and kidney.

## REFERENCES


1. Feigelstock, D., et al. 1998. The human homolog of HAVcr-1 codes for a hepatitis A virus cellular receptor. J. Virol. 72: 6621-6628.
2. McIntire, J.J., et al. 2003. Immunology: hepatitis A virus link to atopic disease. Nature 425: 576.
3. de Souza, A.J., et al. 2005. T cell Ig and Mucin 1 (TIM-1) is expressed on *in vivo*-activated T cells and provides a costimulatory signal for T cell activation. Proc. Natl. Acad. Sci. USA 102: 17113-17118.


## CHROMOSOMAL LOCATION

Genetic locus: HAVCR1 (human) mapping to 5q33.3.

## PRODUCT

TIM-1 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 TIM-1 shRNA Plasmid (h): sc-61691-SH and TIM-1 shRNA (h) Lentiviral Particles: sc-61691-V as alternate gene silencing products.

For independent verification of TIM-1 (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-61691A, sc-61691B and sc-61691C.

## 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

TIM-1 siRNA (h) is recommended for the inhibition of TIM-1 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

TIM-1 (A-12): sc-518008 is recommended as a control antibody for monitoring of TIM-1 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 TIM-1 gene expression knockdown using RT-PCR Primer: TIM-1 (h)-PR: sc-61691-PR (20 µl, 589 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Hofmann-Winkler, H., et al. 2015. Comparative analysis of host cell entry of ebola virus from sierra leone, 2014, and zaire, 1976. J. Infect. Dis. 212: S172-S180.
2. Younan, P., et al. 2017. Ebola virus binding to TIM-1 on T lymphocytes induces a cytokine storm. mBio 8: e00845-17.
3. Yasen, A., et al. 2018. HIV internalization into oral and genital epithelial cells by endocytosis and macropinocytosis leads to viral sequestration in the vesicles. Virology 515: 92-107.
4. Niu, J., et al. 2018. TIM-1 promotes Japanese encephalitis virus entry and infection. Viruses 10: 630.
5. Chiou, B., et al. 2018. Semaphorin4A and H-ferritin utilize TIM-1 on human oligodendrocytes: a novel neuro-immune axis. Glia 66: 1317-1330.


## RESEARCH USE

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