SANTA CRUZ BIOTECHNOLOGY, INC.

TIM-1 siRNA (m): sc-61692

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.
4. Mariat, C., et al. 2005. Regulation of T cell dependent immune responses by TIM family members. Philos. Trans. R. Soc. Lond. B Biol. Sci. 360: 1681-1685.
5. Gielen, A.W., et al. 2005. Expression of T cell immunoglobulin- and mucin-domain-containing molecules-1 and -3 (TIM-1 and -3) in the rat nervous and immune systems. J. Neuroimmunol. 164: 93-104.
6. Nakajima, T., et al. 2005. Evidence for natural selection in the HAVCR1 gene: high degree of amino acid variability in the mucin domain of human HAV-cr1 protein. Genes Immun. 6: 398-406.
7. Umetsu, S.E., et al. 2005. TIM-1 induces T cell activation and inhibits the development of peripheral tolerance. Nat. Immunol. 6: 447-454.
8. Mesri, M., et al. 2006. Inhibition of *in vitro* and *in vivo* T cell responses by recombinant human TIM-1 extracellular domain proteins. Int. Immunol. 18: 473-484.

CHROMOSOMAL LOCATION

Genetic locus: Havcr1 (mouse) mapping to 11 B1.1.

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.

PRODUCT

TIM-1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TIM-1 shRNA Plasmid (m): sc-61692-SH and TIM-1 shRNA (m) Lentiviral Particles: sc-61692-V as alternate gene silencing products.

For independent verification of TIM-1 (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-61692A, sc-61692B and sc-61692C.

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 (m) is recommended for the inhibition of TIM-1 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TIM-1 gene expression knockdown using RT-PCR Primer: TIM-1 (m)-PR: sc-61692-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.