

TIM-4 siRNA (h): sc-76664

BACKGROUND

TIM-4 (T cell immunoglobulin and mucin domain containing 4), also known as SMUCKLER or TIMD4, is a 378 amino acid single-pass type I membrane protein that contains one Ig-like (immunoglobulin-like) V-type domain and belongs to the immunoglobulin superfamily. Expressed predominately in lymphoid tissues, such as spleen, TIM-4 interacts with TIM-1 and is thought to function as a phosphatidylserine receptor, possibly playing a role in apoptotic cell uptake and T cell proliferation, indicating potential involvement in immune system regulation. The gene encoding TIM-4 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610096. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Shakhov, A.N., et al. 2004. SMUCKLER/TIM-4 is a distinct member of TIM family expressed by stromal cells of secondary lymphoid tissues and associated with lymphotoxin signaling. *Eur. J. Immunol.* 34: 494-503.
3. Meyers, J.H., et al. 2005. TIM-4 is the ligand for TIM-1, and the TIM-1-TIM-4 interaction regulates T cell proliferation. *Nat. Immunol.* 6: 455-464.
4. Page, N.S., et al. 2006. Genetic association studies between the T cell immunoglobulin mucin (TIM) gene locus and childhood atopic dermatitis. *Int. Arch. Allergy Immunol.* 141: 331-336.
5. Kobayashi, N., et al. 2007. TIM-1 and TIM-4 glycoproteins bind phosphatidylserine and mediate uptake of apoptotic cells. *Immunity* 27: 927-940.
6. Santiago, C., et al. 2007. Structures of T cell immunoglobulin mucin protein 4 show a metal-ion-dependent ligand binding site where phosphatidylserine binds. *Immunity* 27: 941-951.

CHROMOSOMAL LOCATION

Genetic locus: TIMD4 (human) mapping to 5q33.3.

PRODUCT

TIM-4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TIM-4 shRNA Plasmid (h): sc-76664-SH and TIM-4 shRNA (h) Lentiviral Particles: sc-76664-V as alternate gene silencing products.

For independent verification of TIM-4 (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-76664A, sc-76664B and sc-76664C.

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 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

TIM-4 siRNA (h) is recommended for the inhibition of TIM-4 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 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.

GENE EXPRESSION MONITORING

TIM-4 (G-6): sc-390805 is recommended as a control antibody for monitoring of TIM-4 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-4 gene expression knockdown using RT-PCR Primer: TIM-4 (h)-PR: sc-76664-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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