SANTA CRUZ BIOTECHNOLOGY, INC.

TREML4 siRNA (h): sc-95452

BACKGROUND

Triggering receptor expressed on myeloid cells (TREM) family of proteins are cell surface receptors that may be involved in the innate and adaptive immune response. TREML1 may play a significant role in maintaining vascular hemostasis, coagulation and inflammation at sites of injury through its location in platelets. Defects in the gene encoding TREML1 may be the cause of the Gray platelet syndrome, a rare inherited congenital bleeding disorder caused by a reduction or absence of the platelet α-granules in blood platelets. TREML2 is expressed in cultured B cells, as well as in T cell leukemia and monocyte leukemia, and acts as a counterreceptor for B7-H3. TREML2 interaction with B7-H3 on T cells enhances T cell activation. TREML4 (triggering receptor expressed on myeloid cells-like 4), also known as TLT4, is a 200 amino acid secreted protein containing one Ig-like V-type (immunoglobulin-like) domain. Predominantly expressed in spleen, TREML4 is suggested to be involved in recognizing dead cells by different types of phagocytes in spleen.

REFERENCES

1. Washington, A.V., et al. 2002. Initial characterization of TREM-like transcript (TLT)-1: a putative inhibitory receptor within the TREM cluster. Blood 100: 3822-3824.
2. Allcock, R.J., et al. 2003. The human TREM gene cluster at 6p21.1 encodes both activating and inhibitory single IgV domain receptors and includes NKp44. Eur. J. Immunol. 33: 567-577.
3. Gibot, S. 2005. Clinical review: role of triggering receptor expressed on myeloid cells-1 during sepsis. Crit. Care 9: 485-489.
4. Lu, Y.T., et al. 2006. Preparation and characterization of monoclonal antibody against protein TREM-like transcript-1 (TLT-1). Hybridoma 25: 20-26.
5. King, R.G., et al. 2006. TREM-like transcript 2 is expressed on cells of the myeloid/granuloid and B lymphoid lineage and is upregulated in response to inflammation. J. Immunol. 176: 6012-6021.
6. Hashiguchi, M., et al. 2008. Triggering receptor expressed on myeloid cell-like transcript 2 (TLT-2) is a counter-receptor for B7-H3 and enhances T cell responses. Proc. Natl. Acad. Sci. USA 105: 10495-10500.
7. Ford, J.W., et al. 2009. TREM and TREM-like receptors in inflammation and disease. Curr. Opin. Immunol. 21: 38-46.
8. Hemmi, H., et al. 2009. A new triggering receptor expressed on myeloid cells (Trem) family member, Trem-like 4, binds to dead cells and is a DNAX activation protein 12-linked marker for subsets of mouse macrophages and dendritic cells. J. Immunol. 182: 1278-1286.
9. Molloy, E.J. 2009. Triggering receptor expressed on myeloid cells (TREM) family and the application of its antagonists. Recent Pat. Antiinfect. Drug Discov. 4: 51-56.

CHROMOSOMAL LOCATION

Genetic locus: TREML4 (human) mapping to 6p21.1.

PROTOCOLS

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

PRODUCT

TREML4 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 TREML4 shRNA Plasmid (h): sc-95452-SH and TREML4 shRNA (h) Lentiviral Particles: sc-95452-V as alternate gene silencing products.

For independent verification of TREML4 (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-95452A, sc-95452B and sc-95452C.

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

TREML4 siRNA (h) is recommended for the inhibition of TREML4 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TREML4 gene expression knockdown using RT-PCR Primer: TREML4 (h)-PR: sc-95452-PR (20 µl). 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.