SANTA CRUZ BIOTECHNOLOGY, INC.

TREM-1 siRNA (h): sc-42999

BACKGROUND

TREM-1 (triggering receptor expressed on myeloid cells-1) is expressed in monocytes and neutrophils but not in lymphocytes, dendritic cells or other cell types. TREM-1 is a glycoprotein that is reduced by deglycosylation, in agreement with the predicted molecular mass. TREM-1 is an activating receptor of the Ig superfamily expressed on human myeloid cells, selectively expressed on blood neutrophils and a subset of monocytes, and upregulated by bacterial LPS. Immunoblot analysis shows that TREM-1 is associated with DAP12, a molecule frequently associated with activating receptors. TREM-1 and the myeloid DAP12-associating lectin (MDL-1) are two recently identified receptors which associate non-covalently with DAP12 to form receptor complexes involved in monocytic activation and inflammatory response.

REFERENCES

1. Bouchon, A., et al. 2000. Cutting edge: inflammatory responses can be triggered by TREM-1, a novel receptor expressed on neutrophils and monocytes. J. Immunol. 164: 4991-4995.
2. Bouchon, A., et al. 2001. TREM-1 amplifies inflammation and is a crucial mediator of septic shock. Nature 410: 1103-1107.
3. Gingras, M.C., et al. 2002. TREM-1, MDL-1, and DAP12 expression is associated with a mature stage of myeloid development. Mol. Immunol. 38: 817-824.
4. Chung, D.H., et al. 2002. Characterization of TREM-3, an activating receptor on mouse macrophages: definition of a family of single Ig domain receptors on mouse chromosome 17. Eur. J. Immunol. 32: 59-66.

CHROMOSOMAL LOCATION

Genetic locus: TREM1 (human) mapping to 6p21.1.

PRODUCT

TREM-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 TREM-1 shRNA Plasmid (h): sc-42999-SH and TREM-1 shRNA (h) Lentiviral Particles: sc-42999-V as alternate gene silencing products.

For independent verification of TREM-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-42999A, sc-42999B and sc-42999C.

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

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

TREM-1 (2E2): sc-293450 is recommended as a control antibody for monitoring of TREM-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 TREM-1 gene expression knockdown using RT-PCR Primer: TREM-1 (h)-PR: sc-42999-PR (20 µl, 518 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fan, D., et al. 2016. Triptolide modulates TREM-1 signal pathway to inhibit the inflammatory response in rheumatoid arthritis. Int. J. Mol. Sci. 17: 498.
2. Yamaguchi, R., et al. 2022. IL-23 production in human macrophages is regulated negatively by tumor necrosis factor α-induced protein 3 and positively by specificity protein 1 after stimulation of the toll-like receptor 7/8 signaling pathway. Heliyon 8: e08887.

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.