

TREM-1 siRNA (m) sc-43000

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 that is expressed on human myeloid cells, selectively expressed on blood neutrophils and a subset of monocytes, and is 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 recently identified receptors which associate non-covalently with DAP12 to form receptor complexes that are involved in monocytic activation and inflammatory response.

REFERENCES

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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.
5. Murakami, Y., et al. 2007. Lipopoly-saccharide-induced upregulation of triggering receptor expressed on myeloid cells-1 expression on macrophages is regulated by endogenous prostaglandin E2. *J. Immunol.* 178: 1144-1150.
6. Gibot, S., et al. 2007. TREM-1 promotes survival during septic shock in mice. *Eur. J. Immunol.* 37: 456-466.
7. Zeng, H., et al. 2007. TREM-1 expression in macrophages is regulated at transcriptional level by NF κ B and PU.1. *Eur. J. Immunol.* 37: 2300-2308.
8. Fortin, C.F., et al. 2007. Effects of aging on triggering receptor expressed on myeloid cells (TREM)-1-induced PMN functions. *FEBS Lett.* 581: 1173-1178.

CHROMOSOMAL LOCATION

Genetic locus: Trem1 (mouse) mapping to 17 C.

PRODUCT

TREM-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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TREM-1 shRNA Plasmid (m): sc-43000-SH and TREM-1 shRNA (m) Lentiviral Particles: sc-43000-V as alternate gene silencing products.

For independent verification of TREM-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-43000A, sc-43000B and sc-43000C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TREM-1 gene expression knockdown using RT-PCR Primer: TREM-1 (m)-PR: sc-43000-PR (20 μ l, 512 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Feng, C.W., et al. 2019. Therapeutic effect of modulating TREM-1 via anti-inflammation and autophagy in Parkinson's disease. *Front. Neurosci.* 13: 769.
2. Li, Z., et al. 2019. Inhibition of TREM1 reduces inflammation and oxidative stress after spinal cord injury (SCI) associated with HO-1 expressions. *Biomed. Pharmacother.* 109: 2014-2021.
3. Nguyen, T.T.T., et al. 2020. Tryptophanyl-tRNA synthetase 1 signals activate TREM-1 via TLR2 and TLR4. *Biomolecules* 10: 1283.
4. Zhang, H., et al. 2022. Muscone inhibits the excessive inflammatory response in myocardial infarction by targeting TREM-1. *Evid. Based Complement. Alternat. Med.* 2022: 9112479.

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.