

TLR8 siRNA (h): sc-40268

BACKGROUND

The Toll-like receptors (TLR) are a family of human receptors that share homology with the *Drosophila* Toll receptors, which are involved in mediating dorsoventral polarization in developing *Drosophila* embryos and participate in host immunity. The TLR family members are characterized by a highly conserved Toll homology (TH) domain, which is essential for Toll-induced signal transductions. TLRs are type I transmembrane receptors that contain an extra-cellular domain consisting of several leucine-rich regions and a single cytoplasmic Toll/IL-1R like domain. Three TLR family members, TLR7, TLR8 and TLR9, belong to a subfamily of TLRs which are differentially expressed. TLR7 is expressed in lung, placenta and spleen. TLR8 is expressed in lung and peripheral blood leukocytes, and TLR9 is predominantly expressed in spleen, lymph nodes, bone marrow and peripheral blood leukocytes. TLR7, TLR8 and TLR9 stimulate the NFκB signaling pathway, suggesting that they play a role in the immune response.

REFERENCES

1. Gay, N.J. and Keith, F.J. 1991. *Drosophila* Toll and IL-1 receptor. *Nature* 351: 355-356.
2. Rock, F.L., et al. 1998. A family of human receptors structurally related to *Drosophila* Toll. *Proc. Natl. Acad. Sci. USA* 95: 588-593.
3. Brightbill, H.D., et al. 1999. Host defense mechanisms triggered by microbial lipoproteins through Toll-like receptors. *Science* 285: 732-736.
4. Du, X., et al. 2000. Three novel mammalian Toll-like receptors: gene structure, expression, and evolution. *Eur. Cytokine Netw.* 11: 362-371.

CHROMOSOMAL LOCATION

Genetic locus: TLR8 (human) mapping to Xp22.2.

PRODUCT

TLR8 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 TLR8 shRNA Plasmid (h): sc-40268-SH and TLR8 shRNA (h) Lentiviral Particles: sc-40268-V as alternate gene silencing products.

For independent verification of TLR8 (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-40268A, sc-40268B and sc-40268C.

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

TLR8 siRNA (h) is recommended for the inhibition of TLR8 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

TLR8 (D-8): sc-373760 is recommended as a control antibody for monitoring of TLR8 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 TLR8 gene expression knockdown using RT-PCR Primer: TLR8 (h)-PR: sc-40268-PR (20 μl, 468 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chiang, C., et al. 2015. Sequence-specific modifications enhance the broad-spectrum antiviral response activated by RIG-I agonists. *J. Virol.* 89: 8011-8025.
2. Kim, S.J., et al. 2015. Identification of a novel TLR7 endogenous ligand in RA synovial fluid that can provoke arthritic joint inflammation. *Arthritis Rheumatol.* 68: 1099-1110.
3. Luo, H., et al. 2018. Zika, dengue and yellow fever viruses induce differential anti-viral immune responses in human monocytic and first trimester trophoblast cells. *Antiviral Res.* 151: 55-62.
4. Eng, H.L., et al. 2018. Differences in TLR7/8 activation between monocytes and macrophages. *Biochem. Biophys. Res. Commun.* 497: 319-325.

RESEARCH USE

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