

TLR10 siRNA (h): sc-40272

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. TLR's are type I transmembrane receptors that contain an extracellular domain consisting of several leucine-rich regions and a single cytoplasmic Toll/IL-1R like domain. TLR6 is highly homologous to TLR1, sharing greater than 65% sequence identity, and, like other members of TLR family, it induces NFκB signaling upon activation. TLR10 is also most closely related to TLR1 and TLR6, with 50% and 49% overall homology, respectively. TLR10 is predominantly expressed in tissues and cells involved in the immune response, including spleen, lymph node, thymus and tonsil.

REFERENCES

1. Gay, N.J., et al. 1991. *Drosophila* Toll and IL-1 receptor. *Nature* 351: 355-356.
2. Medzhitov, R., et al. 1997. A human homologue of the *Drosophila* Toll protein signals activation of adaptive immunity. *Nature* 388: 394-397.
3. Rock, F.L., et al. 1998. A family of human receptors structurally related to *Drosophila* Toll. *Proc. Natl. Acad. Sci. USA* 95: 588-593.
4. Brightbill, H.D., et al. 1999. Host defense mechanisms triggered by microbial lipoproteins through Toll-like receptors. *Science* 285: 732-736.
5. Takeuchi, O., et al. 1999. TLR6: a novel member of an expanding Toll-like receptor family. *Gene* 231: 59-65.

CHROMOSOMAL LOCATION

Genetic locus: TLR10 (human) mapping to 4p14.

PRODUCT

TLR10 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 TLR10 shRNA Plasmid (h): sc-40272-SH and TLR10 shRNA (h) Lentiviral Particles: sc-40272-V as alternate gene silencing products.

For independent verification of TLR10 (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-40272A, sc-40272B and sc-40272C.

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

TLR10 siRNA (h) is recommended for the inhibition of TLR10 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

TLR10 (2A11): sc-293300 is recommended as a control antibody for monitoring of TLR10 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 TLR10 gene expression knockdown using RT-PCR Primer: TLR10 (h)-PR: sc-40272-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Balachandran, Y. and Singh, B. 2022. Toll-like receptor 10 has a role in human macrophage response against *Streptococcus pneumoniae*. *Cell Tissue Res.* 390: 51-57.
2. Balachandran, Y., et al. 2022. Regulation of TLR10 expression and its role in chemotaxis of human neutrophils. *J. Innate Immun.* E-published.

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.