SANTA CRUZ BIOTECHNOLOGY, INC.

TLR6 siRNA (h): sc-40264

BACKGROUND

Six human homologs of the *Drosophila* Toll receptor were initially identified based on their sequence similarities and designated Toll-like receptors (TLR). Toll receptors are involved in mediating dorsoventral polarization in the developing *Drosophila* embryo and also participate in the host immunity. The TLR family of proteins are characterized by a highly conserved Toll homology (TH) domain, which is essential for Toll-induced signal transduction. TLR1, as well as the other TLR family members, are type-I transmembrane receptors that characteristically contain an extracellular domain consisting of several leucine-rich regions along with a single cytoplasmic Toll/IL-1R-like domain. TLR2 and TLR4 are activated in response to lipopolysacchride (LPS) stimulation, which results in the activation and translocation of NFκB and suggests that these receptors are involved in mediating inflammatory responses. Expression of TLR receptors is highest in peripheral blood leukocytes, macrophages and monocytes. 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.

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. Yang, R.B., et al. 1998. Toll-like receptor-2 mediates lipopolysaccharide-induced cellular signalling. Nature 395: 284-288.
5. Brightbill, H.D., et al. 1999. Host defense mechanisms triggered by microbial lipoproteins through Toll-like receptors. Science 285: 732-736.
6. Chow, J.C., et al. 1999. Toll-like receptor-4 mediates lipopolysaccharide-induced signal transduction. J. Biol. Chem. 274: 10689-10692.
7. Schwandner, R., et al. 1999. Peptidoglycan and lipoteichoic acid-induced cell activation is mediated by Toll-like receptor 2. J. Biol. Chem. 274: 17406-17409.

CHROMOSOMAL LOCATION

Genetic locus: TLR6 (human) mapping to 4p14.

PRODUCT

TLR6 siRNA (h) is a pool of 2 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 TLR6 shRNA Plasmid (h): sc-40264-SH and TLR6 shRNA (h) Lentiviral Particles: sc-40264-V as alternate gene silencing products.

For independent verification of TLR6 (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-40264A and sc-40264B.

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

TLR6 siRNA (h) is recommended for the inhibition of TLR6 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 TLR6 gene expression knockdown using RT-PCR Primer: TLR6 (h)-PR: sc-40264-PR (20 µl, 445 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Tiwari, R.L., et al. 2014. PKCδ-IRAK1 axis regulates oxidized LDL-induced IL-1β production in monocytes. J. Lipid Res. 55: 1226-1244.
2. Upadhyay, R., et al. 2020. Free light chains injure proximal tubule cells through Stat1-HMGB1-TLR axis. JCI Insight 5: e137191.

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.