

TLR12 siRNA (m): sc-154297

BACKGROUND

The Toll-like Receptors (TLRs) are a family of mammalian receptors that share homology with the *Drosophila* Toll Receptors, which are involved in mediating dorsoventral polarization in developing *Drosophila* embryos and may also participate in host immunity. 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 extracellular domain consisting of several leucine-rich regions and a single cytoplasmic Toll/IL-1R like domain. TLR12 (toll-like receptor 12) is a 906 amino acid single-pass type I membrane protein that contains one TIR domain and 17 LRR repeats and is specific to mouse. Expressed in kidney, liver and bladder epithelial cells, TLR12 participates in innate immune responses to microbial agents and is thought to play a role in preventing infections within the urogenital system.

REFERENCES

1. Tabeta, K., Georgel, P., Janssen, E., Du, X., Hoebe, K., Crozat, K., Mudd, S., Shamel, L., Sovath, S., Goode, J., Alexopoulou, L., Flavell, R.A. and Beutler, B. 2004. Toll-like receptors 9 and 3 as essential components of innate immune defense against mouse cytomegalovirus infection. *Proc. Natl. Acad. Sci. USA* 101: 3516-3521.
2. Zhang, D., Zhang, G., Hayden, M.S., Greenblatt, M.B., Bussey, C., Flavell, R.A. and Ghosh, S. 2004. A toll-like receptor that prevents infection by uropathogenic bacteria. *Science* 303: 1522-1526.
3. Mishra, B.B., Mishra, P.K. and Teale, J.M. 2006. Expression and distribution of toll-like receptors in the brain during murine neurocysticercosis. *J. Neuroimmunol.* 181: 46-56.
4. Hjelmervik, T.O., Lindqvist, A.K., Petersen, K., Johannesson, M., Stavrum, A.K., Johansson, A., Jonsson, R., Holmdahl, R. and Bolstad, A.I. 2007. The influence of the NOD Nss1/Idd5 loci on sialadenitis and gene expression in salivary glands of congenic mice. *Arthritis Res. Ther.* 9: R99.
5. Curtiss, L.K. and Tobias, P.S. 2007. The toll of toll-like receptors, especially toll-like receptor 2, on murine atherosclerosis. *Curr. Drug Targets* 8: 1230-1238.
6. Wu, H., Wang, H., Xiong, W., Chen, S., Tang, H. and Han, D. 2008. Expression patterns and functions of toll-like receptors in mouse sertoli cells. *Endocrinology* 149: 4402-4412.
7. Mishra, B.B., Gundra, U.M. and Teale, J.M. 2008. Expression and distribution of toll-like receptors 11-13 in the brain during murine neurocysticercosis. *J. Neuroinflammation* 5: 53.

CHROMOSOMAL LOCATION

Genetic locus: Tlr12 (mouse) mapping to 4 D2.2.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

TLR12 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 TLR12 shRNA Plasmid (m): sc-154297-SH and TLR12 shRNA (m) Lentiviral Particles: sc-154297-V as alternate gene silencing products.

For independent verification of TLR12 (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-154297A, sc-154297B and sc-154297C.

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

TLR12 siRNA (m) is recommended for the inhibition of TLR12 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 TLR12 gene expression knockdown using RT-PCR Primer: TLR12 (m)-PR: sc-154297-PR (20 μ l, 555 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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