

SignalSilence® Toll-like Receptor 3 siRNA I



✓ 10 µM in 300 µl (100 transfections)

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rev. 02/09/16

For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H

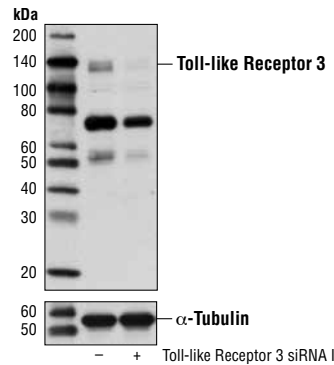
Description: SignalSilence® Toll-like Receptor 3 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Toll-like Receptor 3 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Members of the Toll-like receptor (TLR) family, named for the closely related Toll receptor in *Drosophila*, play a pivotal role in innate immune responses (1-3). TLRs recognize conserved motifs found in various pathogens and mediate defense responses. Triggering of the TLR pathway leads to the activation of NF-κB and subsequent regulation of immune and inflammatory genes. The TLRs and members of the IL-1 receptor family share a conserved stretch of approximately 200 amino acids known as the TIR domain. Upon activation, TLRs associate with a number of cytoplasmic adaptor proteins containing TIR domains including MyD88 (myeloid differentiation factor), MAL/TIRAP (MyD88-adaptor-like/TIR-associated protein), TRIF (Toll-receptor-associated activator of interferon), and TRAM (Toll-receptor-associated molecule). This association leads to the recruitment and activation of IRAK1 and IRAK4, which form a complex with TRAF6 to activate TAK1 and IKK. Activation of IKK leads to the degradation of IκB that normally maintains NF-κB inactivity by sequestering it in the cytoplasm.

Directions for Use: CST recommends transfection with 100 nM Toll-like Receptor 3 siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.

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Western blot analysis of extracts from MCF 10A cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® Toll-like Receptor 3 siRNA I (+), using Toll-like Receptor 3 (D10F10) Rabbit mAb #6961 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The Toll-like Receptor 3 (D10F10) Rabbit mAb confirms silencing of Toll-like Receptor 3 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #7098
Swiss-Prot Acc. #O15455

Storage: Toll-like Receptor 3 siRNA I is supplied in RNase-free water. Aliquot and store at -20°C.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

- (1) Akira, S. (2003) *J Biol Chem* 278, 38105-8.
- (2) Beutler, B. (2004) *Nature* 430, 257-63.
- (3) Dunne, A. and O'Neill, L.A. (2003) *Sci STKE* 2003, re3.