# SignalSilence® TrkA siRNA I

#6613 Store at -20°C

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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

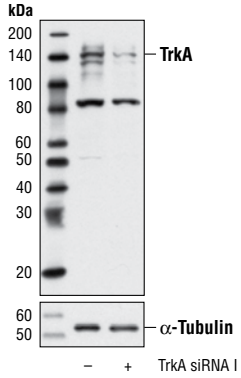
**Species Cross-Reactivity: H**

**Description:** SignalSilence® TrkA siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit TrkA 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:** The family of Trk receptor tyrosine kinases consists of TrkA, TrkB, and TrkC. While the sequence of these family members is highly conserved, they are activated by different neurotrophins: TrkA by NGF, TrkB by BDNF or NT4, and TrkC by NT3 (1). Neurotrophin signaling through these receptors regulates a number of physiological processes, such as cell survival, proliferation, neural development, and axon and dendrite growth and patterning (1). In the adult nervous system, the Trk receptors regulate synaptic strength and plasticity. TrkA regulates proliferation and is important for development and maturation of the nervous system (2). Phosphorylation at Tyr490 is required for Shc association and activation of the Ras-MAP kinase cascade (3,4). Residues Tyr674/675 lie within the catalytic domain, and phosphorylation at these sites reflects TrkA kinase activity (3-6). Point mutations, deletions, and chromosomal rearrangements (chimeras) cause ligand-independent receptor dimerization and activation of TrkA (7-10). TrkA is activated in many malignancies including breast, ovarian, prostate, and thyroid carcinomas (8-13). Research studies suggest that expression of TrkA in neuroblastomas may be a good prognostic marker as TrkA signals growth arrest and differentiation of cells originating from the neural crest (10).

**Directions for Use:** CST recommends transfection with 100 nM TrkA 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.




*Western blot analysis of extracts from SMS-KCN cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® TrkA siRNA I (+), using TrkA (14G6) Rabbit mAb #2508 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The TrkA (14G6) Rabbit mAb confirms silencing of TrkA expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.*

**Entrez-Gene ID** #4914
**UniProt Acc.** #P04629

**Storage:** TrkA 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) Huang, E.J. and Reichardt, L.F. (2003) *Annu Rev Biochem* 72, 609-42.
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(4) Marsh, H.N. et al. (2003) *J Cell Biol* 163, 999-1010.
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(6) Obermeier, A. et al. (1994) *EMBO J* 13, 1585-90.
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(11) Lagadec, C. et al. (2009) *Oncogene* 28, 1960-70.
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(13) Ødegaard, E. et al. (2007) *Hum Pathol* 38, 140-6.



**Applications Key:** **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
**Species Cross-Reactivity Key:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.