SignalSilence® SirT6 siRNA I

#9390 Store at -20°C

☑ 10 µM in 300 µl (3 nmol)

Cell Signaling TECHNOLOGY®

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rev. 04/11/16

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

Species Cross-Reactivity: H

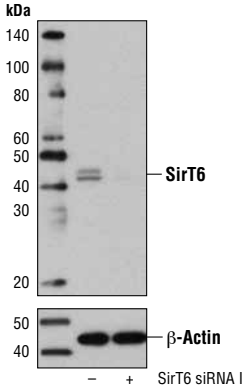
Description: SignalSilence® SirT6 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit SirT6 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: The Silent Information Regulator (Sir2) family of genes is a highly conserved group of genes that encode nicotinamide adenine dinucleotide (NAD)-dependent protein deacetylases, also known as class III histone deacetylases. The first discovered and best characterized of these genes is *Saccharomyces cerevisiae* Sir2, which is involved in silencing of mating type loci, telomere maintenance, DNA damage response, and cell aging (1). SirT6, a mammalian homolog of Sir2, is a nuclear, chromatin-associated protein that promotes the normal maintenance of genome integrity mediated by the base excision repair (BER) pathway (2-4). The BER pathway repairs single-stranded DNA lesions that arise spontaneously from endogenous alkylation, oxidation, and deamination events. SirT6 deficient mice show increased sensitivity to DNA-damaging agents, including the alkylating agents MMS and H_2O_2 (2). In addition, these mice show genome instability with increased frequency of fragmented chromosomes, detached centromeres, and gaps (2). SirT6 may regulate the BER pathway by deacetylating DNA Polβ or other core components of the pathway (2).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® SirT6 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.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.

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 HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® SirT6 siRNA I (+), using SirT6 (D10A4) Rabbit mAb #8771 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The SirT6 (D10A4) Rabbit mAb confirms silencing of SirT6 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #51548
Swiss-Prot Acc. #Q8N6T7

Storage: SirT6 siRNA I is supplied in RNAse-free water. *Aliquot and store at -20ºC.*

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

Background References:

(1) Guarente, L. (1999) *Nat Genet* 23, 281-5.
(2) Mostoslavsky, R. et al. (2006) *Cell* 124, 315-29.
(3) Liszt, G. et al. (2005) *J Biol Chem* 280, 21313-20.
(4) Michishita, E. et al. (2005) *Mol Biol Cell* 16, 4623-35.

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.