#6598 Store at -20°C

SignalSilence® p16 INK4A siRNA I

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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rev. 02/11/16

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

Species Cross-Reactivity: H

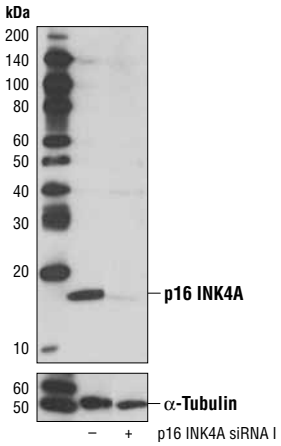
Description: SignalSilence® p16 INK4A siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit p16 INK4A expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Cyclin-dependent kinases (CDKs) are activated in part by forming complexes with cyclins. For example, CDK4 and CDK6 associate with the D-type cyclins and phosphorylate the retinoblastoma protein. This phosphorylation is a necessary event for cells to enter S-phase (1). The inhibitors of CDK4 (INK4) family include p15 INK4B, p16 INK4A, p18 INK4C and p19 INK4D. p18 has been shown to function as a haploinsufficient tumor suppressor *in vivo* (2). All INK4 proteins are composed of 32 amino acid ankyrin motifs and selectively inhibit CDK4/6 activity. Mutational analyses of p18 implicate the third and the amino-terminal portion of the fourth ankyrin repeat in mediating binding to CDK4/6 (3). The interaction of INK4 family members can be a binary complex with CDK4/6 or ternary complex with cyclin D-bound CDK4/6 and ultimately results in the inhibition of cell cycle progression (4,5).

p16 INK4A directly inhibits the activity of cyclin D, thereby inhibiting S-phase entry (6,7). As such, expression of p16 INK4A is commonly associated with cellular senescence, and disruption of the p16 INK4A gene is frequently observed in human cancers.

Directions for Use: CST recommends transfection with 100 nM p16 INK4A 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 HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® p16 INK4A siRNA I (+), using p16 INK4A Antibody #4824 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The p16 INK4A Antibody confirms silencing of p16 INK4A expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #1029
Swiss-Prot Acc. #P42771

Storage: p16 INK4A 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) Lukas, J. et al. (1996) *Mol. Cell. Biol.* 16, 6917-6925.

(2) Bai, F. et al. (2003) *Mol. Cell. Biol.* 23, 1269-1277.

(3) Noh, S.J. et al. (1999) *Cancer Res.* 59, 558-564.

(4) Guan, K.L. et al. (1994) *Genes Dev.* 8, 2939-2952.

(5) Hirai, H. et al. (1995) *Mol. Cell. Biol.* 15, 2672-2681.

(6) Sherr, C.J. (2001) *Nat Rev Mol Cell Biol* 2, 731-7.

(7) Lowe, S.W. and Sherr, C.J. (2003) *Curr Opin Genet Dev* 13, 77-83.

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.