#12104 Store at -20°C

SignalSilence® SP1 siRNA I

☑ 10 µM in 300 µl (3 nmol)

Cell Signaling TECHNOLOGY®

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New 09/12

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

Species Cross-Reactivity: H, (Mk)

Description: SignalSilence® SP1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit SP1 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.

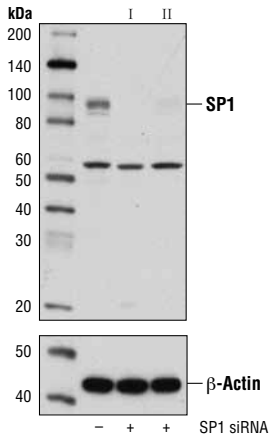
Background: Specificity protein 1 (SP1) is a ubiquitously expressed transcription factor belonging to the family of C2H2-type zinc finger containing DNA-binding proteins. SP1 binds GC-rich motifs with high affinity and regulates the expression of numerous mammalian genes (1,2). It interacts with many other transcription factors, such as c-Myc, EGR1, and Stat1, and with basal transcription machinery components. SP1 interacts with chromatin-modifying factors, such as histone deacetylases (HDACs) and p300 in chromatin remodeling. Transcriptional activity and stability of SP1 are regulated by post-translational modification, including phosphorylation, acetylation, ubiquitination, and glycosylation (3). Glycosylation of SP1 following insulin treatment leads to increased nuclear localization, while glucagon treatment increases cytoplasmic SP1 levels (4-6). Investigators have found high levels of SP1 in patients with Alzheimer's disease (7).

Specificity/Sensitivity: SignalSilence® SP1 siRNA I inhibits human and monkey SP1 expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® SP1 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 (-), SignalSilence® SP1 siRNA I (+), or SignalSilence® SP1 siRNA II #12106 (+), using SP1 Antibody #5931 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The SP1 Antibody confirms silencing of SP1 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control. The SP1 Antibody cross-reacts with a protein of unknown origin at 55 kDa, which is unaffected by SignalSilence® SP1 siRNA I or SignalSilence® SP1 siRNA II.

Entrez-Gene ID #6667
Swiss-Prot Acc. #P08047

Storage: SP1 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) Kadonaga, J.T. et al. (1987) *Cell* 51, 1079-90.

(2) Song, J. et al. (2003) *Int J Mol Med* 11, 547-53.

(3) Tan, N.Y. and Khachigian, L.M. (2009) *Mol Cell Biol* 29, 2483-8.

(4) Majumdar, G. et al. (2003) *Am J Physiol Endocrinol Metab* 285, E584-91.

(5) Majumdar, G. et al. (2006) *J Biol Chem* 281, 3642-50.

(6) Solomon, S.S. et al. (2008) *Life Sci* 83, 305-12.

(7) Citron, B.A. et al. (2008) *J Neurosci Res* 86, 2499-504.

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.