SignalSilence® ATM siRNA I

#6328 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.

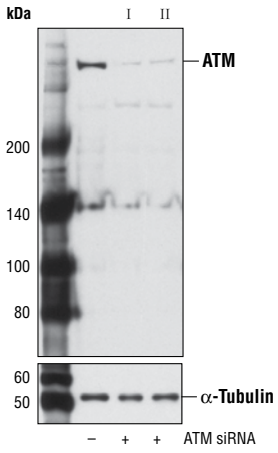
Species Cross-Reactivity: H

Description: SignalSilence® ATM siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit ATM 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: Ataxia telangiectasia mutated kinase (ATM) is a serine/threonine kinase that regulates cell cycle checkpoints and DNA repair (1). Activation of ATM by autophosphorylation on Ser1981 occurs in response to exposed DNA double stranded breaks. ATM kinase regulates a number of proteins involved in cell cycle checkpoint control, apoptosis and DNA repair. Known substrates include p53, Chk2, Chk1, CtIP, 4E-BP1, BRCA1, RPA3, H2A.X, SMC1, FANCD2, Rad17, Artemis, Nbs1 and the I-2 regulatory subunit of PP1 (1,2). Mutations in the corresponding ATM gene result in ataxia telangiectasia (AT), an autosomal recessive disease characterized by uncoordinated muscle movement and neurodegeneration. Cells from AT patients display defective DNA damage-induced checkpoint activation, sensitivity to radiation and a higher frequency of chromosome breakage (3,4).

Directions for Use: CST recommends transfection with 100 nM ATM 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 (-), SignalSilence® ATM siRNA I (+) or SignalSilence® ATM siRNA II #6329 (+), using ATM (D2E2) Rabbit mAb #2873 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The ATM (D2E2) Rabbit mAb confirms silencing of ATM expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #472
Swiss-Prot Acc. #Q13315

Storage: ATM 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) Lee, J.H. and Paull, T.T. (2007) *Oncogene* 26, 7741-8.

(2) Tang, X. et al. (2008) *Mol Cell Biol* 28, 2559-66.

(3) Shiloh, Y. (1997) *Annu Rev Genet* 31, 635-62.

(4) Petrini, J.H. (2000) *Curr Opin Cell Biol* 12, 293-6.

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.