SignalSilence® PTEN siRNA I

#6251 Store at -20°C

☑ 300 µl
(50-100 transfections)

Cell Signaling TECHNOLOGY®

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Species Cross-Reactivity: H, (M, R)

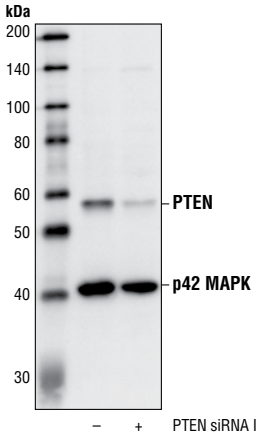
Description: SignalSilence® PTEN siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit PTEN expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence®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

Background: PTEN (phosphatase and tensin homologue deleted on chromosome ten), also referred to as MMAC (mutated in multiple advanced cancers) phosphatase, is a tumor suppressor implicated in a wide variety of human cancers (1). PTEN encodes a 403 amino acid polypeptide originally described as a dual-specificity protein phosphatase (2). The main substrates of PTEN are inositol phospholipids generated by the activation of the phosphoinositide 3-kinase (PI3K) (3). PTEN is a major negative regulator of the PI3K/Akt signaling pathway (1,4,5). PTEN possesses a carboxy-terminal, noncatalytic regulatory domain with three phosphorylation sites (Ser380, Thr382 and Thr383) that regulate PTEN stability and may affect its biological activity (6,7). PTEN regulates p53 protein levels and activity (8) and is involved in G protein coupled signaling during chemotaxis (9,10).

Directions for Use: CST recommends transfection with 100 nM PTEN siRNA I 48 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.

Specificity/ Sensitivity: SignalSilence® PTEN siRNA I will inhibit human, mouse, rat and monkey PTEN expression.



Western blot analysis of extracts from HeLa cells, transfected with non-targeted siRNA (-) or SignalSilence® PTEN siRNA I (+) using PTEN Antibody #9552 and p42 MAP Kinase (Erk2) Antibody #9108. The PTEN antibody confirms silencing of PTEN expression, while the p42 MAPK antibody is used to control for loading and specificity of PTEN siRNA.

Entrez-Gene ID #5728
Swiss-Prot Acc. #P60484

Storage: PTEN 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) Cantley, L.C. and Neel, B.G. (1999) *Proc Natl Acad Sci USA* 96, 4240-5.
(2) Myers, M.P. et al. (1997) *Proc Natl Acad Sci USA* 94, 9052-7.
(3) Myers, M.P. et al. (1998) *Proc Natl Acad Sci USA* 95, 13513-8.
(4) Wan, X. and Helman, L.J. (2003) *Oncogene* 22, 8205-11.
(5) Wu, X. et al. (1998) *Proc Natl Acad Sci USA* 95, 15587-91.
(6) Vazquez, F. et al. (2000) *Mol Cell Biol* 20, 5010-8.
(7) Torres, J. and Pulido, R. (2001) *J Biol Chem* 276, 993-8.
(8) Freeman, D.J. et al. (2003) *Cancer Cell* 3, 117-30.
(9) Funamoto, S. et al. (2002) *Cell* 109, 611-23.
(10) Iijima, M. and Devreotes, P. (2002) *Cell* 109, 599-610.

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.