SignalSilence® USP1 siRNA I

#6490 Store at -20°C

☑ 10 µM in 300 µl (3 nmol)

Cell Signaling TECHNOLOGY®

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

Species Cross-Reactivity: H, (Mk)

Description: SignalSilence® USP1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit USP1 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.

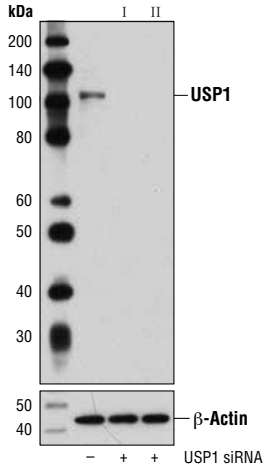
Background: Ubiquitinating enzymes (UBEs) catalyze protein ubiquitination, a reversible process countered by deubiquitinating enzymes (DUB) action (1,2). There are five DUB subfamilies including the USP, UCH, OTU, MJD, and JAMM enzymes. USP1 belongs to the USP subfamily and is regulated in a cell cycle dependent manner by both transcriptional and ubiquitin-proteosomal mechanisms (3). USP1 is a nuclear protein and localizes to chromatin where it is specifically associated with FANCD2. USP1 deubiquitinates monoubiquitinated FANCD2, which plays an important role in DNA damage repair and Chk1 protein stability (3,4). Another important target of USP1 is PCNA. USP1 deubiquitinates monoubiquitinated PCNA, thereby negatively regulating PCNA-mediated translesion synthesis (TLS) during DNA repair (5). USP1 interaction with UAF1, a WD40 repeat-containing protein, leads to formation of an activated USP1/UAF1 complex, which is required for the deubiquitinase activity of USP1 (6,7).

Specificity/Sensitivity: SignalSilence® USP1 siRNA I inhibits human and monkey USP1 expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® USP1 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® USP1 siRNA I (+) or SignalSilence® USP1 siRNA II #6498 (+), using USP1 (D37B4) Rabbit mAb #8033 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The USP1 (D37B4) Rabbit mAb confirms silencing of USP1 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #7398
Swiss-Prot Acc. #O94782

Storage: Storage: USP1 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) Nijman, S.M. et al. (2005) *Cell* 123, 773-86.
(2) Nalepa, G. et al. (2006) *Nat Rev Drug Discov* 5, 596-613.
(3) Nijman, S.M. et al. (2005) *Mol Cell* 17, 331-9.
(4) Guervilly, J.H. et al. (2011) *Hum Mol Genet* , 20, 2171-81.
(5) Huang, T.T. et al. (2006) *Nat Cell Biol* 8, 339-47.
(6) Cohn, M.A. et al. (2007) *Mol Cell* 28, 786-97.
(7) Cohn, M.A. et al. (2009) *J Biol Chem* 284, 5343-51.

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.