SignalSilence® UBA2 siRNA II

#7642 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.

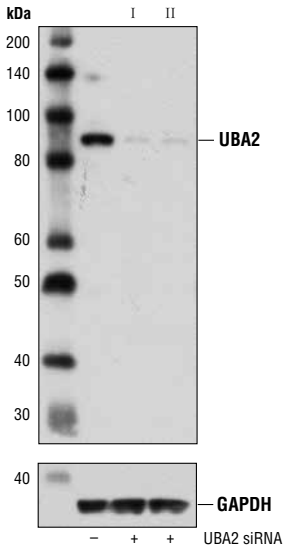
Species Cross-Reactivity: H

Description: SignalSilence® UBA2 siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit UBA2 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: The process of SUMO conjugation to target proteins is similar to the molecular chain of events observed with ubiquitin (1). SUMO is conjugated to target proteins through the coordinated action of the cellular SUMO conjugation machinery consisting of E1, E2, and E3 enzymes (2). The canonical SUMO E1 activating enzyme is a heterodimer consisting of SAE1 (AOS1) and UBA2 (SAE2) subunits. Mature SUMO is activated by E1 in an ATP-dependent reaction that generates adenylated SUMO, which functions as a high-energy intermediate in the formation of a thioester linkage between SUMO and Cys173 of UBA2 (3,4). SUMO is subsequently transferred from UBA2 to the SUMO E2 conjugating enzyme, UBC9 (5). Recent evidence suggests that redox regulation of UBA2 serves as a physiologic mechanism to modulate the cellular level of sumoylated target proteins (6).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® UBA2 siRNA II 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 293T cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® UBA2 siRNA I #7646 (+) or SignalSilence® UBA2 siRNA II (+), using UBA2 (D15C11) Rabbit mAb #8688 (upper) or GAPDH (D16H11) XP® Rabbit mAb #5174 (lower). The UBA2 (D15C11) Rabbit mAb confirms silencing of UBA2 expression, while the GAPDH (D16H11) XP® Rabbit mAb is used as a loading control.

Entrez-Gene ID #10054
Swiss-Prot Acc. #Q9UBT2

Storage: UBA2 siRNA II 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) Geiss-Friedlander, R. and Melchior, F. (2007) *Nat Rev Mol Cell Biol* 8, 947-56.

(2) Tatham, M.H. et al. (2003) *Biochemistry* 42, 9959-69.

(3) Desterro, J.M. et al. (1999) *J Biol Chem* 274, 10618-24.

(4) Gong, L. et al. (1999) *FEBS Lett* 448, 185-9.

(5) Desterro, J.M. et al. (1997) *FEBS Lett* 417, 297-300.

(6) Bossis, G. and Melchior, F. (2006) *Mol Cell* 21, 349-57.

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.