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SignalSilence® UVRAG siRNA I

Cell Signaling TECHNOLOGY®

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New 07/13

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

Species Cross-Reactivity: H, (Mk)

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

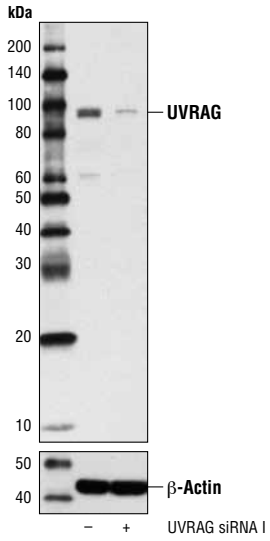
Background: Autophagy is a catabolic process for the autophagosomic-lysosomal degradation of bulk cytoplasmic contents (1,2). It is generally activated by conditions of nutrient deprivation but has also been associated with a number of physiological processes including development, differentiation, neurodegeneration, infection and cancer (3). The molecular machinery of autophagy was largely discovered in yeast and referred to as autophagy-related (Atg) genes. These proteins are involved in the formation of cytoplasmic vacuoles called autophagosomes that are delivered to lysosomes for degradation.

The class III type phosphoinositide 3-kinase (PI3KC3)/Vps34 regulates vacuolar trafficking as well as autophagy (4,5). Multiple proteins have been shown to be associated with Vsp34, including: p105/Vsp15, Beclin-1, UVRAG, Atg14, and Rubicon, which can determine Vsp34 function (6-11). UVRAG (UV radiation resistance-associated gene) is associated with the Beclin-1/PI3KC3 complex and promotes PI3KC3 enzymatic activity and autophagy, while suppressing proliferation (11). Beclin-1 binding to UVRAG promotes both autophagosome maturation and endocytic trafficking (12). UVRAG is also a potential tumor suppressor protein with frameshift mutations observed in colon and gastric carcinomas (13,14).

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

Directions for Use: CST recommends transfection with 100 nM SignalSilence® UVRAG 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.



Western blot analysis of extracts from MCF7 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® UVRAG siRNA I (+), using UVRAG (D2Q1Z) Rabbit mAb #13115 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The UVRAG (D2Q1Z) Rabbit mAb confirms silencing of UVRAG expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

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.

Entrez-Gene ID #7405
Swiss-Prot Acc. #Q9P2Y5

Storage: UVRAG 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) Reggiori, F. and Klionsky, D.J. (2002) *Eukaryot Cell* 1, 11-21.

(2) Codogno, P. and Meijer, A.J. (2005) *Cell Death Differ* 12 Suppl 2, 1509-18.

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(4) Corvera, S. (2001) *Traffic* 2, 859-66.

(5) Stack, J.H. et al. (1995) *J Cell Biol* 129, 321-34.

(6) Liang, C. et al. (2008) *Nat Cell Biol* 10, 776-87.

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(11) Liang, C. et al. (2006) *Nat Cell Biol* 8, 688-99.

(12) Liang, C. et al. (2008) *Nat Cell Biol* 10, 776-87.

(13) Ionov, Y. et al. (2004) *Oncogene* 23, 639-45.

(14) Kim, M.S. et al. (2008) *Hum Pathol* 39, 1059-63.

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.