Store at -20°C

#5289

SignalSilence® KEAP1 siRNA II

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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

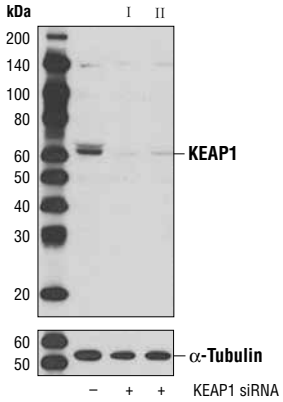
Species Cross-Reactivity: H

Description: SignalSilence® KEAP1 siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit KEAP1 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 nuclear factor-like 2 (NRF2) transcription activator binds antioxidant response elements (ARE) of target gene promoter regions to regulate expression of oxidative stress response genes. Under basal conditions, the NRF2 inhibitor INrf2 (also called KEAP1) binds and retains NRF2 in the cytoplasm where it can be targeted for ubiquitin-mediated degradation (1). Small amounts of constitutively present nuclear NRF2 maintain cellular homeostasis through regulation of basal expression of antioxidant response genes. Following oxidative or electrophilic stress, KEAP1 releases NRF2 from the cytoplasm, where the activator translocates to the nucleus to bind to ARE-containing genes (2). The coordinated action of NRF2 and other transcription factors mediates the response to oxidative stress (3). Altered expression of NRF2 is associated with chronic obstructive pulmonary disease (COPD) (4). Activity levels of NRF2 in lung cancer cell lines directly correlates with cell proliferation rate and inhibition of NFR2 expression by siRNA enhances anti-cancer drug induced apoptosis (5).

Directions for Use: CST recommends transfection with 100 nM KEAP1 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 HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® KEAP1 siRNA I #5285 (+) or SignalSilence® KEAP1 siRNA II (+), using KEAP1 (H436) Antibody #4617 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The KEAP1 (H436) Antibody confirms silencing of KEAP1 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #9817
Swiss-Prot Acc. #Q14145

Storage: KEAP1 siRNA II 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) Cullinan, S.B. et al. (2004) *Mol Cell Biol* 24, 8477-86.

(2) Nguyen, T. et al. (2005) *J Biol Chem* 280, 32485-92.

(3) Jaiswal, A.K. (2004) *Free Radic Biol Med* 36, 1199-207.

(4) Suzuki, M. et al. (2008) *Am J Respir Cell Mol Biol* 39, 673-82.

(5) Homma, S. et al. (2009) *Clin Cancer Res* 15, 3423-32.

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.