

# SignalSilence® SQSTM1/p62 siRNA I



✓ 10 µM in 300 µl (100 Transfections)

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

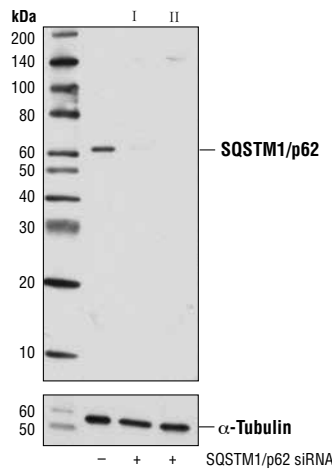
### Species Cross-Reactivity: H

**Description:** SignalSilence® SQSTM1/p62 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit SQSTM1/p62 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:** Sequestosome 1 (SQSTM1, p62) is a ubiquitin binding protein involved in cell signaling, oxidative stress, and autophagy (1-4). It was first identified as a protein that binds to the SH2 domain of p56Lck (5), and independently found to interact with PKCζ (6,7). It was subsequently found to interact with ubiquitin, providing a scaffold for several signaling proteins and triggering degradation of proteins through the proteasome or lysosome (8). Interaction between SQSTM1 and TRAF6 leads to the K63-linked polyubiquitination of TRAF6 and subsequent activation of the NF-κB pathway (9). Protein aggregates formed by SQSTM1 can be degraded by the autophagosome (4,10,11). SQSTM1 binds autophagosomal membrane protein LC3/Atg8, bringing SQSTM1-containing protein aggregates to the autophagosome (12). Lysosomal degradation of autophagosomes leads to a decrease in SQSTM1 levels during autophagy; conversely, autophagy inhibitors stabilize SQSTM1 levels. Studies have demonstrated a link between SQSTM1 and oxidative stress. SQSTM1 interacts with KEAP1, which is a cytoplasmic inhibitor of NRF2, a key transcription factor involved in cellular responses to oxidative stress (3). Thus, accumulation of SQSTM1 can lead to an increase in NRF2 activity.

**Directions for Use:** CST recommends transfection with 100 nM SQSTM1/p62 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.

**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® SQSTM1/p62 siRNA I (+) or SignalSilence® SQSTM1/p62 siRNA II #6399 (+), using SQSTM1/p62 (D5E2) Rabbit mAb #8025 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The SQSTM1/p62 (D5E2) Rabbit mAb confirms silencing of SQSTM1/p62 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #8878  
Swiss-Prot Acc. #Q13501

**Storage:** SQSTM1/p62 siRNA I is supplied in RNase-free water. Aliquot and store at -20°C.

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

### Background References:

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- (12) Pankiv, S. et al. (2007) *J Biol Chem* 282, 24131-45.