Store at -20°C

#6212

SignalSilence® LC3B siRNA I

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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

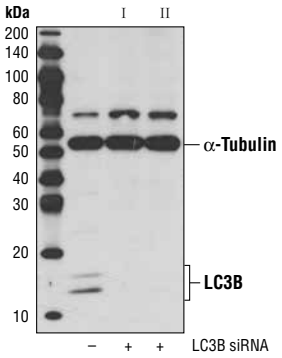
Species Cross-Reactivity: H, M, R

Description: SignalSilence® LC3B siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit LC3B expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. LC3B siRNA I will not inhibit expression of LC3A or LC3C. 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). Autophagy is generally activated by conditions of nutrient deprivation but has also been associated with a number of physiological processes including development, differentiation, neurodegenerative diseases, infection and cancer (3). Autophagy marker Light Chain 3 (LC3) was originally identified as a subunit of microtubule-associated proteins 1A and 1B (termed MAP1LC3) (4), and subsequently found to contain similarity to the yeast protein Apg8/Aut7/Cvt5 critical for autophagy (5). Three human LC3 isoforms (LC3A, LC3B, and LC3C) undergo post-translational modifications during autophagy (6-9). Cleavage of LC3 at the carboxy terminus immediately following synthesis yields the cytosolic LC3-I form. During autophagy, LC3-I is converted to LC3-II through lipidation by a ubiquitin-like system involving Atg7 and Atg3 that allows for LC3 to become associated with autophagic vesicles (6-10). The presence of LC3 in autophagosomes and the conversion of LC3 to the lower migrating form LC3-II have been used as indicators of autophagy (11).

Directions for Use: CST recommends transfection with 100 nM LC3B 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® LC3B siRNA I (+) or SignalSilence® LC3B siRNA II #6213 (+), using LC3B (D11) XP™ Rabbit mAb #3868 and α-Tubulin (11H10) Rabbit mAb #2125. The LC3B (D11) XP™ Rabbit mAb confirms silencing of LC3B expression, while the α-Tubulin (11H10) Rabbit mAb is used to control for loading and specificity of LC3B siRNA.

Entrez-Gene ID #81631
Swiss-Prot Acc. #Q9GZQ8

Storage: LC3B 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, 1509-1518.

(3) Levine, B. and Yuan, J. (2005) *J. Clin. Invest.* 115, 2679-2688.

(4) Mann, S.S. and Hammarback, J.A. (1994) *J. Biol. Chem.* 269, 11492-11497.

(5) Lang, T. et al. (1998) *EMBO J.* 17, 3597-3607.

(6) Kabeya, Y. et al. (2000) *EMBO J.* 19, 5720-5728.

(7) He, H. et al. (2003) *J. Biol. Chem.* 278, 29278-29287.

(8) Tanida, I. et al. (2004) *J. Biol. Chem.* 279, 47704-47710.

(9) Wu, J. et al. (2006) *Biochem. Biophys. Res. Commun.* 339, 437-442.

(10) Ichimura, Y. et al. (2000) *Nature* 408, 488-492.

(11) Kabeya, Y. et al. (2004) *J. Cell Sci.* 117, 2805-2812.

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.