SignalSilence® mTOR siRNA I (Mouse Specific)

#6332 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.

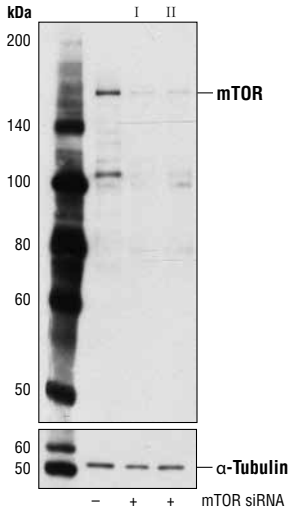
Species Cross-Reactivity: M

Description: SignalSilence® mTOR siRNA I (Mouse Specific) from Cell Signaling Technology (CST) allows the researcher to specifically inhibit mTOR 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 mammalian target of rapamycin (mTOR, FRAP, RAFT) is a Ser/Thr protein kinase (1-3) that functions as an ATP and amino acid sensor to balance nutrient availability and cell growth (4,5). When sufficient nutrients are available, mTOR responds to a phosphatidic acid-mediated signal to transmit a positive signal to p70 S6 kinase and participate in the inactivation of the eIF4E inhibitor, 4E-BP1 (6). These events result in the translation of specific mRNA subpopulations. mTOR is phosphorylated at Ser2448 via the PI3 kinase/Akt signaling pathway and autophosphorylated at Ser2481 (7,8). mTOR plays a key role in cell growth and homeostasis and may be abnormally regulated in tumors. For these reasons, mTOR is currently under investigation as a potential target for anti-cancer therapy (9).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® mTOR siRNA I (Mouse Specific) 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 NIH/3T3 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® mTOR siRNA I (Mouse Specific) (+), or SignalSilence® mTOR siRNA II (Mouse Specific) #6342 (+) using mTOR (7C10) Rabbit mAb #2983 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The mTOR (7C10) Rabbit mAb confirms silencing of mTOR expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #56717
Swiss-Prot Acc. #Q9JLN9

Storage: mTOR siRNA I (Mouse Specific) 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) Sabers, C.J. et al. (1995) *J Biol Chem* 270, 815-22.
(2) Brown, E.J. et al. (1994) *Nature* 369, 756-8.
(3) Sabatini, D.M. et al. (1994) *Cell* 78, 35-43.
(4) Gingras, A.C. et al. (2001) *Genes Dev* 15, 807-26.
(5) Dennis, P.B. et al. (2001) *Science* 294, 1102-5.
(6) Fang, Y. et al. (2001) *Science* 294, 1942-5.
(7) Navé, B.T. et al. (1999) *Biochem J* 344 Pt 2, 427-31.
(8) Peterson, R.T. et al. (2000) *J Biol Chem* 275, 7416-23.
(9) Huang, S. and Houghton, P.J. (2003) *Curr Opin Pharmacol* 3, 371-7.

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.