SignalSilence® eIF4E siRNA I

#6311 Store at -20C

☑ 10 µM in 300 µl
(100 Transfections)

Cell Signaling TECHNOLOGY®

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rev. 07/18/11

Species Cross-Reactivity: H, (R)

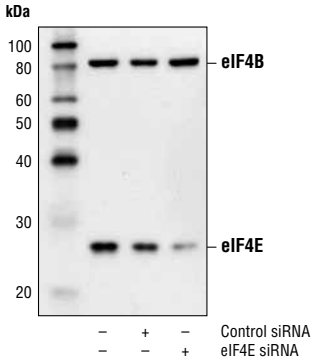
Description: SignalSilence® eIF4E siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit eIF4E expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Eukaryotic initiation factor 4E (eIF4E) binds to the mRNA cap structure to mediate the initiation of translation (1,2). eIF4E interacts with eIF4G, a scaffold protein that promotes assembly of eIF4E and eIF4A into the eIF4F complex (2). eIF4B is thought to assist the eIF4F complex in translation initiation. Upon activation by mitogenic and/or stress stimuli mediated by Erk and p38 MAPK, Mnk1 phosphorylates eIF4E at Ser209 in vivo (3,4). Two Erk and p38 MAPK phosphorylation sites in mouse Mnk1 (Thr197 and Thr202) are essential for Mnk1 kinase activity (3). The carboxy-terminal region of eIF4G also contains serum-stimulated phosphorylation sites, including Ser1108, Ser1148, and Ser1192 (5). Phosphorylation at these sites is blocked by the PI3 kinase inhibitor LY294002 and by the FRAP/mTOR inhibitor rapamycin.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® eIF4E siRNA I 48-72 hours prior to cell lysis.

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.

Specificity/ Sensitivity: eIF4E siRNA I will inhibit human and rat eIF4E expression.



Western blot analysis of extracts from HeLa cells, untransfected or transfected with either nonspecific control siRNA or eIF4E siRNA. eIF4E was detected using eIF4E Antibody #9742, and eIF4B was detected using eIF4B Antibody #3592. The eIF4E Antibody confirms silencing of eIF4E expression, and the eIF4B Antibody is used to control for loading and siRNA specificity.

Entrez-Gene ID #1977
Swiss-Prot Acc. #P06730

Storage: eIF4E 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) Sonenberg, N. et al. (1978) *Proc. Natl. Acad. Sci. USA* 75, 4843-4847.

(2) Gingras, A.C. et al. (1999) *Annu. Rev. Biochem.* 68, 913-963.

(3) Waskiewicz, A. et al. (1999) *Mol. Cell. Biol.* 19, 1871-1880.

(4) Pyronnet, S. et al. (1999) *EMBO J.* 18, 270-279.

(5) Raught, B. et al. (2000) *EMBO J.* 19, 434-444.

(6) Yamagiwa , Y. et al. (2003) *Hepatology* 38, 158-166.*ScienceCellScienceProc Natl Acad Sci USAJ Biol ChemFEBS LettNatureGenes DevJ Biol ChemNat Cell BiolBiochem JNat Cell BiolMol CellJ. Biol. Chem.*S

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.