SignalSilence® MARK2 siRNA I

#6266 Store at -20°C

☑ 10µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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

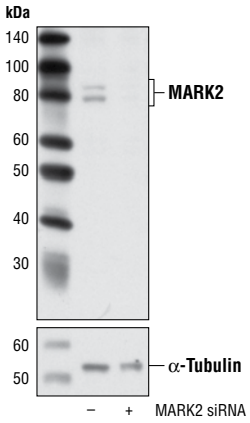
Species Cross-Reactivity: H

Description: SignalSilence® MARK2 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit MARK2 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: Microtubule associated proteins regulate the stability of microtubules and control processes such as cell polarity/differentiation, neurite outgrowth, cell division and organelle trafficking (1). The MARK (MAP/microtubule affinity-regulating kinases) family (MARK1-4) of serine/threonine kinases was identified based on their ability to phosphorylate microtubule-associated proteins (MAPs) including tau, MAP2 and MAP4 (2-6). MARK proteins phosphorylate MAPs within their microtubule binding domains, causing dissociation of MAPs from microtubules and increased microtubule dynamics (2-4). In the case of tau, phosphorylation has been hypothesized to contribute to the formation of neurofibrillary tangles observed in Alzheimer's disease. Overexpression of MARK leads to hyperphosphorylation of MAPs, morphological changes and cell death (4). The tumor suppressor kinase LKB1 phosphorylates MARK and the closely related AMP-kinases within their T-loops, leading to increased activity (7).

Directions for Use: CST recommends transfection with 100 nM MARK2 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 (-) or SignalSilence® MARK2 siRNA I (+), using MARK2 Antibody #9118 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The MARK2 Antibody confirms silencing of MARK2 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #2011
Swiss-Prot Acc. #Q7KZI7

Storage: MARK2 siRNA I 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) Drubin, D.G. and Nelson, W.J. (1996) *Cell* 84, 335-344.

(2) Illenberger, S. et al. (1996) *J. Biol. Chem.* 271, 10834-10843.

(3) Drewes, G. et al. (1995) *J. Biol. Chem.* 270, 7679-7688.

(4) Drewes, G. et al. (1997) *Cell* 89, 297-308.

(5) Kato, T. et al. (2001) *Neoplasia* 3, 4-9.

(6) Trinczek, B. et al. (2004) *J. Biol. Chem.* 279, 5915-5923.

(7) Lizcano, J. M. et al. (2004) *EMBO J.* 23, 833-843.

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.