Store at -20°C

#9400

SignalSilence® CK2α siRNA I (Rodent Specific)

☑ 10µM in 300 µl (3 nmol)

Cell Signaling TECHNOLOGY®

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

Species Cross-Reactivity: M, (R)

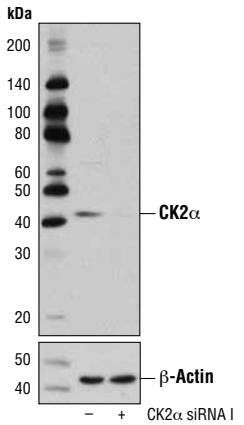
Description: SignalSilence® CK2α siRNA I (Rodent Specific) from Cell Signaling Technology (CST) allows the researcher to specifically inhibit CK2α expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into 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: CK2 (formerly called Casein Kinase II) is a highly conserved protein kinase with more than 300 substrates regulating cell growth, cell death, and cell survival. CK2 has been implicated in the response to UV irradiation-induced DNA damage, targeting XRCC1 (1) and BRCA1 (2) as well as regulating p53 tumor suppressor protein functions (3). Furthermore, CK2 plays a key role in NF-κB activation (4). UV irradiation stimulates CK2-mediated phosphorylation of several carboxy-terminal residues within IκBα, resulting in IκBα proteasomal degradation and the release and nuclear translocation of active NF-κB. CK2 is also dysregulated in many cancers (5) and neurodegenerative diseases such as Alzheimer's and Parkinson's diseases (6). Structurally, CK2 is a multimeric protein complex consisting of two catalytic subunits (α or α') and two regulatory β subunits (7). CK2 is distributed ubiquitously and is apparently constitutively active (7). While cell cycle-dependent Ser-Pro phosphorylation sites have been identified on CK2α and CK2β, Tyr255 phosphorylation by the Src-related kinase c-Fgr seems to have the greatest effect on CK2α activity (8,9).

Specificity/Sensitivity: SignalSilence® CK2α siRNA I (Rodent Specific) inhibits mouse and rat CK2α expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® CK2α siRNA I (Rodent 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.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.



Western blot analysis of extracts from NIH/3T3 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® CK2α siRNA I (Rodent Specific) (+), using CK2α Antibody #2656 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The CK2α Antibody confirms silencing of CK2α expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

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.

Entrez-Gene ID #12995
Swiss-Prot Acc. #Q60737

Storage: CK2α siRNA I (Rodent 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) Morales, J.C. and Carpenter, P.B. (2004) *Sci Aging Knowledge Environ* 2004, pe24.

(2) O'Brien, K.A. et al. (1999) *Biochem Biophys Res Commun* 260, 658-64.

(3) Cox, M.L. and Meek, D.W. (2010) *Cell Signal* 22, 564-71.

(4) Dominguez, I. et al. (2009) *Cell Mol Life Sci* 66, 1850-7.

(5) Trembley, J.H. et al. *Biofactors* 36, 187-95.

(6) Perez, D.I. et al. (2010) *Med Res Rev*, Epub ahead of print.

(7) Bosc, D.G. et al. (1995) *J Biol Chem* 270, 25872-8.

(8) Donella-Deana, A. et al. (2003) *Biochem J* 372, 841-9.

(9) Litchfield, D.W. (2003) *Biochem J* 369, 1-15.

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.