SignalSilence® CK2α siRNA I

#6389 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.

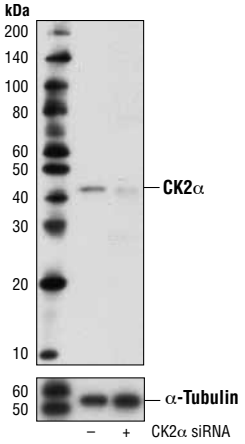
Species Cross-Reactivity: H

Description: SignalSilence® CK2α siRNA I 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 constitutively active and distributed ubiquitously (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 effection CK2α activity (8,9).

Directions for Use: CST recommends transfection with 100 nM CK2α 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® CK2α siRNA I (+), using CK2α Antibody #2656 and α-Tubulin (11H10) Rabbit mAb #2125. The CK2α Antibody confirms silencing of CK2α expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #1457
Swiss-Prot Acc. #P68400

Storage: CK2α 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) Knaus, U.G. and Bokoch, G.M. (1998) *Int. J. Biochem. Cell Biol.* 30, 857-862.
(2) Daniels, R.H. et al. (1998) *EMBO J.* 17, 754-764.
(3) King, C.C. et al. (2000) *J. Biol. Chem.* 275, 41201-41209.
(4) Manser, E. et al. (1997) *Mol. Cell. Biol.* 17, 1129-1143.
(5) Gatti, A. et al. (1999) *J. Biol. Chem.* 274, 8022-8028.
(6) Lei, M. et al. (2000) *Cell* 102, 387-397.
(7) Chong, C. et al. (2001) *J. Biol. Chem.* 276, 17347-17353.
(8) Zhao, Z. et al. (2000) *Mol. Cell. Biol.* 20, 3906-3917.
(9) Abo, A. et al. (1998) *EMBO J.* 17, 6527-6540.
(10) Qu, J. et al. (2001) *Mol. Cell. Biol.* 21, 3523-3533.

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.