#13506 Store at -20°C

SignalSilence® APC1 siRNA II

Cell Signaling TECHNOLOGY®

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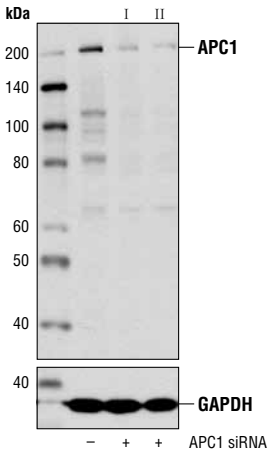
For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H

Description: SignalSilence® APC1 siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit APC1 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: Eukaryotic cell proliferation depends strictly upon the E3 ubiquitin ligase activity of the anaphase promoting complex/cyclosome (APC/C), whose main function is to trigger the transition of the cell cycle from metaphase to anaphase. The APC/C complex promotes the assembly of polyubiquitin chains on substrate proteins in order to target these proteins for degradation by the 26S proteasome (1,2). The vertebrate APC/C complex consists of as many as 15 subunits, including multiple scaffold proteins, two catalytic subunits (APC2, APC11), and a number of proteins responsible for substrate recognition (3). All E3 enzymes, including APC/C, utilize ubiquitin residues activated by E1 enzymes and transferred to E2 enzymes. Research studies indicate that APC/C interacts with the E2 enzymes UBE2S and UBE2C via the RING-finger domain-containing subunit APC11 (4-6). APC/C function relies on multiple cofactors, including an APC/C coactivator formed by the cell division control protein 20 homolog (CDC20) and Cdh1/FZR1. The CDC20/Cdh1 coactivator is responsible for recognition of APC/C substrates through interaction with specific D-box and KEN-box recognition elements within these substrates (7-9).

The ubiquitously expressed anaphase-promoting complex subunit 1 (APC1) is the largest subunit of the APC/C complex (10). Research studies demonstrate that APC1 undergoes extensive phosphorylation on serine and threonine residues during the mitotic phase of the eukaryotic cell cycle (11).



Western blot analysis of extracts from 293T cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® APC1 siRNA I #13441 (+), or SignalSilence® APC1 siRNA II (+), using APC1 (D1E9D) Rabbit mAb #13329 (upper) or GAPDH (D16H11) XP® Rabbit mAb #5174 (lower). The APC1 (D1E9D) Rabbit mAb confirms silencing of APC1expression, while the GAPDH (D16H11) XP® Rabbit mAb is used as a loading control.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® APC1 siRNA II 48 to 72 hours prior to cell lysis. For transfection procedure, follow the 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.

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 #64682
UniProt Acc. #Q9H1A4

Storage: APC1 siRNA II is supplied in RNAse-free water. *Aliquot and store at -20°C.*

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Qiao, X. et al. (2010) *Cell Cycle* 9, 3904-12.
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(3) Chang, L. et al. (2014) *Nature* 513, 388-93.
(4) Carroll, C.W. and Morgan, D.O. (2002) *Nat Cell Biol* 4, 880-7.
(5) Gmachl, M. et al. (2000) *Proc Natl Acad Sci U S A* 97, 8973-8.
(6) Leverson, J.D. et al. (2000) *Mol Biol Cell* 11, 2315-25.
(7) Kraft, C. et al. (2005) *Mol Cell* 18, 543-53.
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(11) Kraft, C. et al. (2003) *EMBO J* 22, 6598-609.

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.