Store at -20°C

#6451

SignalSilence® Rb siRNA I

☑ 300 µl
(50-100 transfections)

Cell Signaling TECHNOLOGY®

Orders ■ 877-616-CELL (2355)
orders@cellsignal.com
Support ■ 877-678-TECH (8324)
info@cellsignal.com
Web ■ www.cellsignal.com

rev. 02/11/16

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

Species Cross-Reactivity: H, M, R

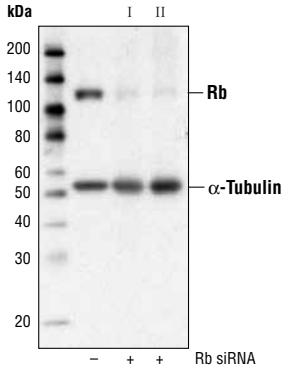
Description: SignalSilence® Rb siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Rb expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence®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

Background: The retinoblastoma tumor suppressor protein, Rb, regulates cell proliferation by controlling progression through the restriction point within the G1-phase of the cell cycle (1). Rb has three functionally distinct binding domains and interacts with critical regulatory proteins including the E2F family of transcription factors, c-Abl tyrosine kinase and proteins with a conserved LXCXE motif (2-4). Cell cycle-dependent phosphorylation by a CDK inhibits Rb target binding and allows cell cycle progression (5). Rb inactivation and subsequent cell cycle progression likely requires an initial phosphorylation by cyclin D-CDK4/6 followed by cyclin E-CDK2 phosphorylation (6). Specificity of different CDK/cyclin complexes has been observed *in vitro* (6-8) and cyclin D1 is required for Ser780 phosphorylation *in vivo* (9).

RNA interference has been used to silence Rb protein expression in prostate cancer cells resulting in increased Bcl-2 protein levels (10).

Directions for Use: CST recommends transfection with 50-100 nM Rb siRNA I 48 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 293 cells, transfected with control (-) or SignalSilence® Rb siRNA I (+), using Rb (4H1) Mouse mAb #9309 and p44/42 MAPK (Erk1/2) (3A7) Mouse mAb #9107. The Rb antibody confirms silencing of Rb expression, while the p42 MAPK antibody is used to control for loading and specificity of Rb siRNA.

Entrez-Gene ID #5925
Swiss-Prot Acc. #P06400

Storage: Rb 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) Sherr, C.J. (1996) *Science* 274, 1672-7.
(2) Nevins, J.R. (1992) *Science* 258, 424-9.
(3) Welch, P.J. and Wang, J.Y. (1993) *Cell* 75, 779-90.
(4) Hu, Q.J. et al. (1990) *EMBO J* 9, 1147-55.
(5) Knudsen, E.S. and Wang, J.Y. (1997) *Mol Cell Biol* 17, 5771-83.
(6) Lundberg, A.S. and Weinberg, R.A. (1998) *Mol Cell Biol* 18, 753-61.
(7) Connell-Crowley, L. et al. (1997) *Mol Biol Cell* 8, 287-301.
(8) Kitagawa, M. et al. (1996) *EMBO J* 15, 7060-9.
(9) Geng, Y. et al. (2001) *Proc Natl Acad Sci USA* 98, 194-9.
(10) Huang, H. et al. (2004) *Oncogene* 23, 2161-2176.

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.