#13253 Store at -20°C

SignalSilence® MUC1 siRNA I

Cell Signaling TECHNOLOGY®

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New 08/13

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

Species Cross-Reactivity: H

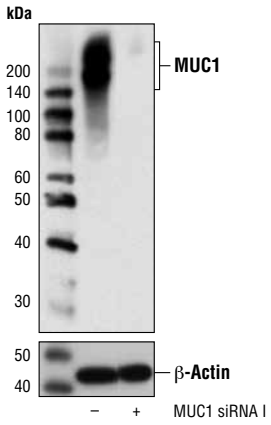
Description: SignalSilence® MUC1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit MUC1 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Mucins represent a family of glycoproteins characterized by repeat domains and dense O-glycosylation (1). MUC1 (or mucin 1) is aberrantly overexpressed in most human carcinomas. Increased expression of MUC1 in carcinomas reduces cell-cell and cell-ECM interactions. MUC1 is cleaved proteolytically, and the large ectodomain can remain associated with the small 25 kDa carboxy-terminal domain that contains a transmembrane segment and a cytoplasmic tail of 72 residues (1). MUC1 interacts with ErbB family receptors and potentiates ERK1/2 activation (2). MUC1 also interacts with β-catenin, which is regulated by GSK-3β, PKCγ and Src through phosphorylation at Ser44, Thr41 and Tyr46 of MUC1 cytoplasmic tail (3-5). Overexpression of MUC1 potentiates transformation (6), and attenuates stress-induced apoptosis through the Akt or p53 pathways (7,8).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® MUC1 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.

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.



Western blot analysis of extracts from ZR-75-1 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® MUC1 siRNA I (+), using MUC1 (VU4H5) Mouse mAb #4538 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The MUC1 (VU4H5) Mouse mAb confirms silencing of MUC1 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #4582
UniProt Acc. #P15941

Storage: MUC1 siRNA 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) Baldus, S. E. et al. (2004) *Crit. Rev. Clin. Lab. Sci.* 41, 189-231.

(2) Schroeder, J. A. et al. (2001) *J. Biol. Chem.* 276, 13057-13064.

(3) Li, . et al. (1998) *Mol. Cell. Biol.* 18, 7216-7224.

(4) Li, Y. et al. (2001) *J. Biol. Chem.* 276, 6061-6064.

(5) Ren, J. et al. (2002) *J. Biol. Chem.* 277, 17616-17622.

(6) Schroeder, J. A. et al. (2004) *Oncogene* 23, 5739-5747.

(7) Raina, D. et al. (2004) *J. Biol. Chem.* 279, 20607-20612.

(8) Wei, X. et al. (2005) *Cancer Cell* 7, 167-178.

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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.