Store at -20°C

#6242

SignalSilence® FoxO1 siRNA I

☑ 10 µM in 300 µl
(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

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

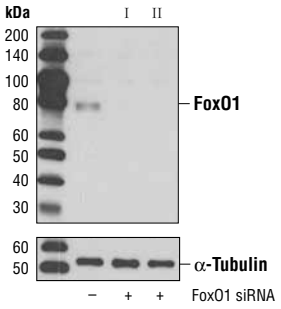
Species Cross-Reactivity: H

Description: SignalSilence® FoxO1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit FoxO1 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 Forkhead family of transcription factors is involved in tumorigenesis of rhabdomyosarcoma and acute leukemias (1-3). Within the family, three members (FoxO1, FoxO4 and FoxO3a) have sequence similarity to the nematode orthologue DAF-16, which mediates signaling via a pathway involving IGFR1, PI3K and Akt (4-6). Active forkhead members act as tumor suppressors by promoting cell cycle arrest and apoptosis. Increased expression of any FoxO member results in the activation of the cell cycle inhibitor p27Kip1. Forkhead transcription factors also play a part in TGF-β-mediated upregulation of p21CIP1, a process negatively regulated through PI3K (7). Increased proliferation results when forkhead transcription factors are inactivated through phosphorylation by Akt at Thr24, Ser256 and Ser319, which results in nuclear export and inhibition of transcription factor activity (8). Forkhead transcription factors can also be inhibited by the deacetylase sirtuin (SirT1) (9).

Directions for Use: CST recommends transfection with 100 nM FoxO1 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 (-), SignalSilence® FoxO1 siRNA I (+) or SignalSilence® FoxO1 siRNA II #6256 (+), using FoxO1 (C29H4) Rabbit mAb #2880 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The FoxO1 (C29H4) Rabbit mAb confirms silencing of FoxO1 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #2308
Swiss-Prot Acc. #Q12778

Storage: FoxO1 siRNA I 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) Anderson, M.J. et al. (1998) *Genomics* 47, 187-199.
(2) Galili, N. et al. (1993) *Nat. Genet.* 5, 230-235.
(3) Borkhardt, A. et al. (1997) *Oncogene* 14, 195-202.
(4) Nakae, J. et al. (1999) *J. Biol. Chem.* 274, 15982-15985.
(5) Rena, G. et al. (1999) *J. Biol. Chem.* 274, 17179-17183.
(6) Guo, S. et al. (1999) *J. Biol. Chem.* 274, 17184-17192.
(7) Seoane, J. et al. (2004) *Cell* 117, 211-223.
(8) Arden, K.C. (2004) *Mol. Cell* 14, 416-418.
(9) Yang, Y. et al. (2005) *EMBO J.* 24, 1021-1032.

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.