

SignalSilence® FoxO1 siRNA II (Mouse Specific)

✓ 10 µM in 300 µl
(100 transfections)



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

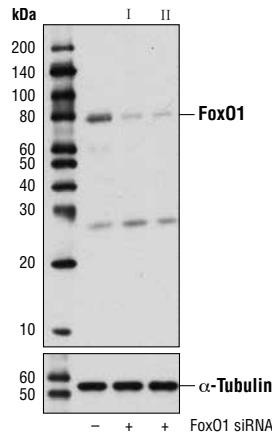
Species Cross-Reactivity: M

Description: SignalSilence® FoxO1 siRNA II (Mouse Specific) 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 IGF1R, 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 p27 Kip1. Forkhead transcription factors also play a part in TGF-β-mediated upregulation of p21 Cip1, 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 SignalSilence® FoxO1 siRNA II (Mouse Specific) 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 C2C12 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® FoxO1 siRNA I (Mouse Specific) #6468 (+), or SignalSilence® FoxO1 siRNA II (Mouse Specific) (+) 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 #56458
Swiss-Prot Acc. #Q9R1E0

FoxO1 siRNA II (Mouse Specific) 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) 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.