

SignalSilence® Mitofusin-1 siRNA I



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New 10/13

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

Species Cross-Reactivity: H, (M, R)

Description: SignalSilence® Mitofusin-1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit mitofusin-1 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.

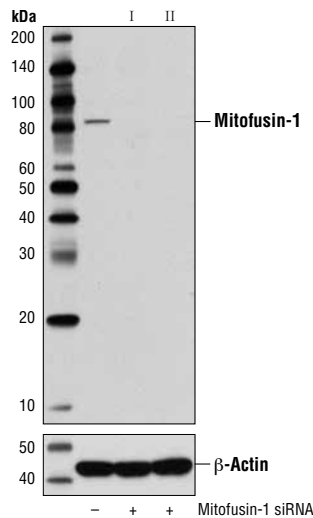
Background: Mitofusins are mitochondrial transmembrane GTPases that function to regulate mitochondrial fusion, a process that occurs in concert with mitochondrial division and is necessary for the maintenance of structural and genetic mitochondrial integrity (1,2). Two mitofusins have been described in mammals, mitofusin-1 and -2, which share 60% amino acid identity and appear to function coordinately to regulate mitochondrial fusion (3). Mitochondrial fusion is widely recognized as important for normal cell growth and development (4), and may have evolved as a mechanism to offset the deleterious effects of mtDNA mutations (3). Null mutations in either mitofusin are embryonic lethal in mice, whereas conditional knockout studies have shown that combined deletion of mitofusin-1 and mitofusin-2 in skeletal muscle results in severe mitochondrial dysfunction (3).

Specificity/Sensitivity: SignalSilence® Mitofusin-1 siRNA I inhibits human, mouse and rat mitofusin-1 expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® Mitofusin-1 siRNA I 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.



Western blot analysis of extracts from HeLa cells, transfected with SignalSilence® Control siRNA (unconjugated) #6568 (-), SignalSilence® Mitofusin-1 siRNA I (+) or SignalSilence® Mitofusin-1 siRNA II #13303 (+), using Mitofusin-1 Antibody #13196 (upper) or β-Actin (D8A6) Rabbit mAb #8457 (lower). The Mitofusin-1 Antibody confirms silencing of mitofusin-1 expression, while the β-Actin (D8A6) Rabbit mAb is used as a loading control.

Entrez-Gene ID #55669
Swiss-Prot Acc. #Q8IWA4

Storage: Mitofusin-1 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) Zhang, Y. and Chan, D.C. (2007) *FEBS Lett* 581, 2168-73.
- (2) Chan, D.C. (2006) *Annu Rev Cell Dev Biol* 22, 79-99.
- (3) Chen, H. et al. (2010) *Cell* 141, 280-9.
- (4) Bereiter-Hahn, J. and Vöth, M. (1994) *Microsc Res Tech* 27, 198-219.