

#12791 Store at -20°C

SignalSilence® Smad4 siRNA I (Mouse Specific)

✓ 10 µM in 300 µl (3 nmol)



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

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

Description: SignalSilence® Smad4 siRNA I (Mouse Specific) from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Smad4 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.

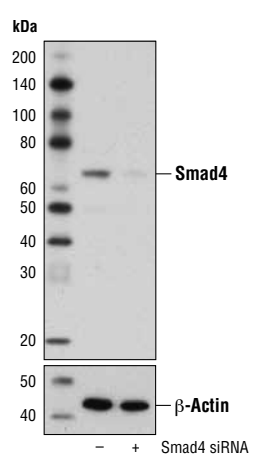
Background: Members of the Smad family of signal transduction molecules are components of a critical intracellular pathway that transmits TGF-β signals from the cell surface into the nucleus. Three distinct classes of Smads have been defined: the receptor-regulated Smads (R-Smads), which include Smad1, 2, 3, 5, 8; the common-mediator Smad (co-Smad), Smad4; and the antagonistic or inhibitory Smads (I-Smads), Smad6 and 7 (1-5). Briefly, activated type I receptors associate with specific R-Smads and phosphorylate them on a conserved SSXS motif at the carboxy-terminus of the proteins. The phosphorylated R-Smad dissociates from the receptor and forms a heteromeric complex with the co-Smad, Smad4, and together the complex moves to the nucleus. Once in the nucleus, Smads can target a variety of DNA binding proteins to regulate transcriptional responses (6-8).

Specificity/Sensitivity: SignalSilence® Smad4 siRNA I (Mouse Specific) inhibits mouse, rat, and monkey Smad4 expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® Smad4 siRNA I (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.

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 NIH/3T3 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® Smad4 siRNA I (Mouse Specific) (+), using Smad4 Antibody #9515 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The Smad4 Antibody confirms silencing of Smad4 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #17128
Swiss-Prot Acc. #P97471

Storage: Smad4 siRNA I (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) Heldin, C. H. et al. (1997) *Nature* 390, 465-471.
- (2) Attisano, L. and Wrana, J.L. (1998) *Curr. Opin. Cell Biol.* 10, 188-194.
- (3) Derynck, R. et al. (1998) *Cell* 95, 737-740.
- (4) Massague, J. (1998) *Annu. Rev. Biochem.* 67, 753-791.
- (5) Whitman, . (1998) *Genes Dev.* 12, 2445-2462.
- (6) Wrana, J. (2000) *Science* 23, 1-9.
- (7) Attisano, L. and Wrana, J. (2002) *Science* 296, 1646-1647.
- (8) Moustakas, A. et al. (2001) *J. Cell Sci.* 114, 4359-4369.

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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.