

SignalSilence® PTP1B siRNA I



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New 10/13

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

Species Cross-Reactivity: H

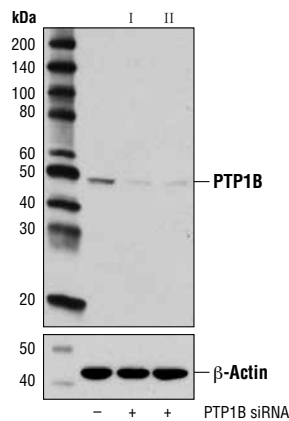
Description: SignalSilence® PTP1B siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit PTP1B expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Protein-tyrosine phosphatase 1B (PTP1B) is the original member of the protein tyrosine phosphatase (PTP) family of proteins (1). PTP1B is highly expressed in insulin-responsive tissues and negatively regulates insulin, as well as integrin, through dephosphorylation of phosphotyrosine residues (2-4). PTP1B knockout mice show resistance to dietary weight gain and enhanced insulin sensitivity, suggesting a possible role in treatment of obesity as well as type 2 diabetes (5).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® PTP1B 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® PTP1B siRNA I (+) or SignalSilence® PTP1B siRNA II #13380 (+), using PTP1B Antibody #5311 (upper) or β-Actin (D8A6) Rabbit mAb #8457 (lower). The PTP1B Antibody confirms silencing of PTP1B expression, while the β-Actin (D8A6) Rabbit mAb is used as a loading control.

Entrez-Gene ID #5770
UniProt Acc. #P18031

Storage: SignalSilence® 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) Liang, F. et al. (2005) *J Biol Chem* 280, 24857-63.
- (2) Kenner, K.A. et al. (1996) *J Biol Chem* 271, 19810-6.
- (3) Klamann, L.D. et al. (2000) *Mol Cell Biol* 20, 5479-89.
- (4) Liu, F. et al. (1998) *Curr Biol* 8, 173-6.
- (5) Elchebly, M. et al. (1999) *Science* 283, 1544-8.