SignalSilence® SHP-2 siRNA I

#7917 Store at -20°C

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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

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

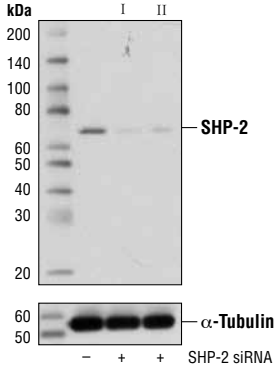
Description: SignalSilence® SHP-2 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit SHP-2 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: SHP-2 (PTPN11) is a ubiquitously expressed, nonreceptor protein tyrosine phosphatase (PTP). It participates in signaling events downstream of receptors for growth factors, cytokines, hormones, antigens, and extracellular matrices in the control of cell growth, differentiation, migration, and death (1). Activation of SHP-2 and its association with Gab1 is critical for sustained Erk activation downstream of several growth factor receptors and cytokines (2). In addition to its role in Gab1-mediated Erk activation, SHP-2 attenuates EGF-dependent PI3 kinase activation by dephosphorylating Gab1 at p85 binding sites (3). SHP-2 becomes phosphorylated at Tyr542 and Tyr580 in its carboxy-terminus in response to growth factor receptor activation (4). These phosphorylation events are thought to relieve basal inhibition and stimulate SHP-2 tyrosine phosphatase activity (5). Mutations in the corresponding gene result in a pair of clinically similar disorders (Noonan syndrome and LEOPARD syndrome) that may result from abnormal MAPK regulation (6).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® SHP-2 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.

Specificity/Sensitivity: SHP-2 siRNA I inhibits human, mouse, and monkey SHP-2 expression.



Western blot analysis of extracts from 293T cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® SHP-2 siRNA I (+), or SignalSilence® SHP-2 siRNA II #7927 (+), using SHP-2 (D50F2) Rabbit mAb #3397 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The SHP-2 (D50F2) Rabbit mAb confirms silencing of SHP-2 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #5781
Swiss-Prot Acc. #Q06124

Storage: SHP-2 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) Qu, C.K. (2000) *Cell Res* 10, 279-88.

(2) Maroun, C.R. et al. (2000) *Mol Cell Biol* 20, 8513-25.

(3) Zhang, S.Q. et al. (2002) *Mol Cell Biol* 22, 4062-72.

(4) Bennett, A.M. et al. (1994) *Proc Natl Acad Sci U S A* 91, 7335-9.

(5) Lu, W. et al. (2001) *Mol Cell* 8, 759-69.

(6) Edouard, T. et al. (2007) *Cell Mol Life Sci* 64, 1585-90.

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.