#6601 Store at -20°C

SignalSilence® p38δ MAPK siRNA II

☑ 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

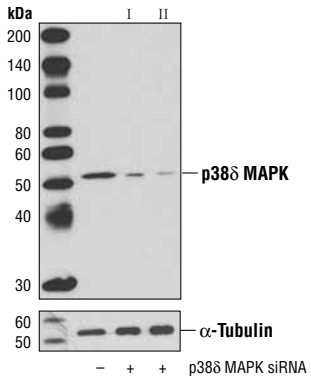
Description: SignalSilence® p38δ MAPK siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit p38δ MAPK expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: p38 MAP kinase (MAPK), also called RK (1) or CSBP (2), is the mammalian orthologue of the yeast HOG kinase that participates in a signaling cascade controlling cellular responses to cytokines and stress (1-4). Four isoforms of p38 MAP kinase, p38α, β, γ (also known as ERK6 or SAPK3) and δ (also known as SAPK4) have been identified. Similar to the SAPK/JNK pathway, p38 MAP kinase is activated by a variety of cellular stresses including osmotic shock, inflammatory cytokines, lipopolysaccharides (LPS), UV light and growth factors (1-5). MKK3, MKK6 and SEK activate p38 MAP kinase by phosphorylation at Thr180 and Tyr182. Activated p38 MAP kinase has been shown to phosphorylate and activate MAPKAP kinase 2 (3) and to phosphorylate the transcription factors ATF-2 (5), Max (6) and MEF2 (5-8).

SB203580 (4-(4-fluorophenyl)-2-(4-methylsulfinylphenyl)-5-(4- pyridyl)imidazole) is a selective inhibitor of p38 MAPK. This compound inhibits the activation of MAPKAPK-2 by p38 and thereby phosphorylation of HSP27 (9). SB203580 inhibits p38 catalytic activity by binding to the ATP binding pocket, but does not inhibit phosphorylation of p38 by upstream kinases (10).

Directions for Use: CST recommends transfection with 100 nM p38δ MAPK siRNA II 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 293 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® p38δ MAPK siRNA I #6600 (+) or SignalSilence® p38δ MAPK siRNA II (+), usingp38δ MAPK (10A8) Rabbit mAb #2308 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The p38δ MAPK (10A8) Rabbit mAb confirms silencing of p38δ MAPK expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #5603
Swiss-Prot Acc. #O15264

Storage: p38δ MAPK siRNA II 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) Rouse, J. et al. (1994) *Cell* 78, 1027-1037.

(2) Han, J. et al. (1994) *Science* 265, 808-811.

(3) Lee, J.C. et al. (1994) *Nature* 372, 739-746.

(4) Freshney, N.W. et al. (1994) *Cell* 78, 1039-1049.

(5) Raingeaud, J. et al. (1995) *J. Biol. Chem.* 270, 7420-7426.

(6) Zervos, A.S. et al. (1995) *Proc. Natl. Acad. Sci. USA* 92, 10531-10534.

(7) Zhao, M. et al. (1999) *Mol. Cell. Biol.* 19, 21-30.

(8) Yang, S.H. et al. (1999) *Mol. Cell. Biol.* 19, 4028-4038.

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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.