SignalSilence® SAPK/JNK siRNA I

#6232 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, R, Mk)

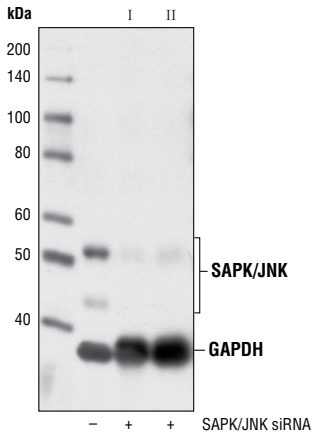
Description: SignalSilence® SAPK/JNK siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit SAPK/JNK expression by RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All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

Background: The stress-activated protein kinase/Jun-amino-terminal kinase SAPK/JNK is potently and preferentially activated by a variety of environmental stresses, including UV and gamma radiation, ceramides, inflammatory cytokines and in some instances, by growth factors and GPCR agonists (1-6). As with the other MAPKs, the core signaling unit is composed of a MAPKKK, typically MEKK1-4, or by one of the mixed lineage kinases (MLKs), which phosphorylate and activate MKK4-7, which then phosphorylate and activate the SAPK/JNK kinase (2). Stress signals are delivered to this cascade by small GTPases of the Rho family (Rac, Rho, cdc42) (3). Both Rac1 and cdc42 mediate the stimulation of MEKKs and MLKs (3). Alternatively, MKK4-7 can be activated by a pathway independent of small GTPases via stimulation of a member of the germinal center kinase (GCK) family (4). There are three SAPK/JNK genes with further diversification resulting from alternative splicing (3). SAPK/JNK, when active as a dimer, can translocate to the nucleus where it regulates transcription through its effects on c-Jun, ATF-2 and other transcription factors (3,5).

Directions for Use: CST recommends transfection with 100 nM SAPK/JNK siRNA I 48 to 72 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: SignalSilence® SAPK/JNK siRNA I will inhibit JNK1 and JNK2 expression. It wil not affect JNK3. SAPK/JNK siRNA I will inhibit human, mouse, rat and monkey SAPK/JNK expression.



Western blot analysis of extracts from HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® SAPK/JNK siRNA I (+) or SignalSilence® SAPK/JNK siRNA II #6233 (+), using SAPK/JNK (56G8) Rabbit mAb #9258 and GAPDH (14C10) Rabbit mAb #2118. The SAPK/JNK antibody confirms silencing of SAPK/JNK expression and GAPDH (14C10) rabbit mAb is used to control for loading and specificity of SAPK/JNK siRNA.

Entrez-Gene ID #5599
Swiss-Prot Acc. #P45983

Storage: SAPK/JNK 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) Davis, R.J. (1999) *Biochem Soc Symp* 64, 1–12.

(2) Ichijo, H. (1999) *Oncogene* 18, 6087–93.

(3) Kyriakis, J.M. and Avruch, J. (2001) *Physiol Rev* 81, 807–69.

(4) Kyriakis, J.M. (1999) *J Biol Chem* 274, 5259–62.

(5) Leppä, S. and Bohmann, D. (1999) *Oncogene* 18, 6158–62.

(6) Whitmarsh, A.J. and Davis, R.J. (1998) *Trends Biochem Sci* 23, 481–5.

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.