SignalSilence® PERK siRNA I

#9024 Store at -20°C

☑ 10 µM in 300 µl (3 nmol)

Cell Signaling TECHNOLOGY®

Orders ■ 877-616-CELL (2355) orders@cellsignal.com
Support ■ 877-678-TECH (8324) info@cellsignal.com
Web ■ www.cellsignal.com

rev. 03/28/16

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

Species Cross-Reactivity: H, (Mk)

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

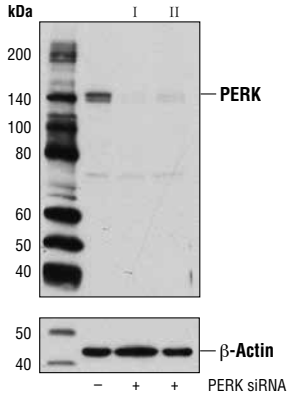
Background: Protein kinase-like endoplasmic reticulum kinase (PERK) is an eIF2α kinase and transmembrane protein resident in the endoplasmic reticulum (ER) membrane that couples ER stress signals to translation inhibition (1-3). ER stress increases the activity of PERK, which then phosphorylates eIF2α to promote reduced translation. Research studies have demonstrated that PERK-deficient mice have defects in pancreatic β cells several weeks after birth, suggesting a role for PERK-mediated translational control in protecting secretory cells from ER stress (4). PERK activation during ER stress correlates with autophosphorylation of its cytoplasmic kinase domain (1-3). Phosphorylation of PERK at Thr980 serves as a marker for its activation status.

Specificity/Sensitivity: SignalSilence® PERK siRNA I inhibits human and monkey PERK expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® PERK 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.

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 293T cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® PERK siRNA I (+), or SignalSilence® PERK siRNA II #9026 (+), using PERK (C33E10) Rabbit mAb #3192 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The PERK (C33E10) Rabbit mAb confirms silencing of PERK expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #9451
Swiss-Prot Acc. #Q9NZJ5

Storage: PERK 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) Harding, H. et al. (1999) *Nature* 397, 271-274.
(2) Shi, Y. et al. (1998) *Mol. Cell. Biol.* 18, 7499-7509.
(3) Harding, H. et al. (2000) *Mol. Cell* 5, 897-904.
(4) Harding, H. et al. (2001) *Mol. Cell* 7, 1153-1163.

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.