SignalSilence® S100A4 siRNA II

#13021 Store at -20°C

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New 08/13

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

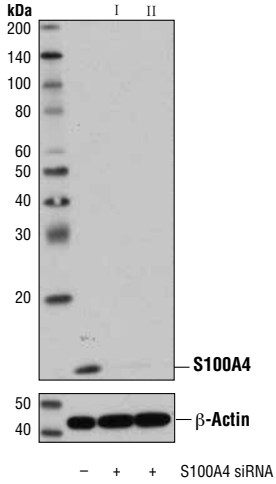
Species Cross-Reactivity: H (Mk)

Description: SignalSilence® S100A4 siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit S100A4 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: Despite their relatively small size (8-12 kDa) and uncomplicated architecture, S100 proteins regulate a variety of cellular processes such as cell growth and motility, cell cycle progression, transcription, and differentiation. To date, 25 members have been identified, including S100A1-S100A18, trichohyalin, filaggrin, repetin, S100P, and S100Z, making it the largest group in the EF-hand, calcium-binding protein family. Interestingly, 14 S100 genes are clustered on human chromosome 1q21, a region of genomic instability. Research studies have demonstrated that significant correlation exists between aberrant S100 protein expression and cancer progression. S100 proteins primarily mediate immune responses in various tissue types but are also involved in neuronal development (1-4).

Each S100 monomer bears two EF-hand motifs and can bind up to two molecules of calcium (or other divalent cation in some instances). Structural evidence shows that S100 proteins form antiparallel homo- or heterodimers that coordinate binding partner proximity in a calcium-dependent (and sometimes calcium-independent) manner. Although structurally and functionally similar, individual members show restricted tissue distribution, are localized in specific cellular compartments, and display unique protein binding partners, which suggests that each plays a specific role in various signaling pathways. In addition to an intracellular role, some S100 proteins have been shown to act as receptors for extracellular ligands or are secreted and exhibit cytokine-like activities (1-4).

Research studies have shown that S100A4 is overexpressed in highly metastatic cancers, which makes it useful as a marker of tumor progression (5,6) and may serve as a prognostic factor in several cancer types (7-10). S100A4 exerts its function via direct interaction with a number of proteins including P53, P63, nonmuscle myosin IIA, α6β4 integrin, and liprin b1 (11-15). S100A4 is present in the nucleus, cytoplasm and extracellular space. Intracellular and extracellular S100A4 both promote cell migration via interaction with different proteins. Researchers have recently discovered that S100A4 also functions as a neuroprotectant in the peripheral nervous system (16,17).



Western blot analysis of extracts from A172 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® S100A4 siRNA I #12966 (+), or SignalSilence® S100A4 siRNA II (+), using S100A4 (D9F9D) Rabbit mAb #13018 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The S100A4 (D9F9D) Rabbit mAb confirms silencing of S100A4 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Specificity/Sensitivity: SignalSilence® S100A4 siRNA II inhibits human and monkey S100A4 expression.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® S100A4 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.

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.

Entrez-Gene ID #6275
Swiss-Prot Acc. #P26447

Storage: S100A4 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:

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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.