SignalSilence® IRF-7 siRNA I

#13139 Store at -20°C

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

Species Cross-Reactivity: H

Description: SignalSilence® IRF-7 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit IRF-7 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.

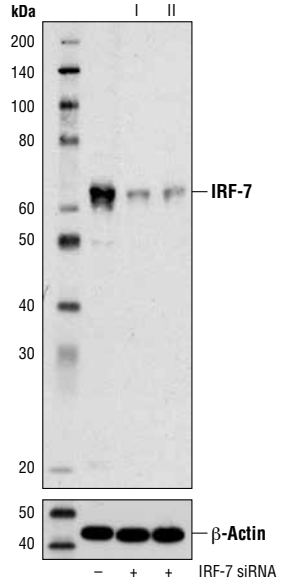
Background: Interferon regulatory factors (IRFs) comprise a family of transcription factors that function within the Jak/Stat pathway to regulate interferon (IFN) and IFN-inducible gene expression in response to viral infection (1). IRFs play an important role in pathogen defense, autoimmunity, lymphocyte development, cell growth, and susceptibility to transformation. The IRF family includes nine members: IRF-1, IRF-2, ISGF3γ/p48, IRF-3, IRF-4 (Pip/LSIRF/ICSAT), IRF-5, IRF-6, IRF-7, and IRF-8/ICSBP. All IRF proteins share homology in their amino-terminal DNA-binding domains. IRF family members regulate transcription through interactions with proteins that share similar DNA-binding motifs, such as IFN-stimulated response elements (ISRE), IFN consensus sequences (ICS), and IFN regulatory elements (IRF-E) (2).

IRF-7, which is functionally similar to IRF-3, is preferentially expressed in lymphoid cells and induced by virus, LPS, and IFN-α (3-5). IRF-7 plays an essential role in the induction of type I interferon in response viral infection (6-8). Like IRF-3, IRF-7 is regulated at multiple serine phosphorylation sites near its carboxyl terminus, which are required for nuclear translocation, DNA binding and transcriptional activity (9-11).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® IRF-7 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 HT-29 cells transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® IRF-7 siRNA I (+) or SignalSilence® IRF-7 siRNA II #13291 (+). Twenty-four hours after transfection, cells were treated with Human Interferon-α1 (hIFN-α1) #8927 (10 ng/ml, overnight; +) and analyzed by western blot using IRF-7 (D2A1J) Rabbit mAb #13014 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The IRF-7 (D2A1J) Rabbit mAb confirms silencing of IRF-7 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #3665
Swiss-Prot Acc. #Q92985

Storage: IRF-7 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) Taniguchi, T. et al. (2001) *Annu Rev Immunol* 19, 623-55.
(2) Honda, K. and Taniguchi, T. (2006) *Nat Rev Immunol* 6, 644-58.
(3) Au, W.C. et al. (1998) *J Biol Chem* 273, 29210-7.
(4) Wathelet, M.G. et al. (1998) *Mol Cell* 1, 507-18.
(5) Marié, I. et al. (1998) *EMBO J* 17, 6660-9.
(6) Sato, M. et al. (2000) *Immunity* 13, 539-48.
(7) Honda, K. et al. (2005) *Nature* 434, 772-7.
(8) Colina, R. et al. (2008) *Nature* 452, 323-8.
(9) Lin, R. et al. (2000) *J Biol Chem* 275, 34320-7.
(10) Yang, H. et al. (2003) *J Biol Chem* 278, 15495-504.
(11) Caillaud, A. et al. (2005) *J Biol Chem* 280, 17671-7.

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.