SANTA CRUZ BIOTECHNOLOGY, INC.

IRF-4 siRNA (h): sc-35712

BACKGROUND

Interferon regulatory factor-4 (IRF-4) belongs to the IRF family of DNA-binding factors which regulate both interferon and interferon-inducible genes. Family members include IRF-1-7, ISGF-3γ p48 and IFN consensus sequence-binding protein (ICSBP). IRF-4 is also known as lymphocyte specific interferon regulatory factor (LSIRF), multiple myeloma oncogene 1 and PU.1 interaction partner (Pip). A nuclear protein specific to lymphoid cells, IRF-4 is a transcriptional activator that binds to the interferon-stimulated response element (ISRE) of the MHC class I promoter.

REFERENCES

1. Fujita, T., et al. 1988. Evidence for a nuclear factor(s), IRF-1, mediating induction and silencing properties to human IFN-β gene regulatory elements. EMBO J. 7: 3397-3405.
2. Tanaka, N., et al. 1993. Recognition DNA sequence of interferon regulatory factor 1 (IRF-1) and IRF-2, regulators of cell growth and the interferon system. Mol. Cell. Biol. 13: 4531-4538.
3. Darnell, J.E., Jr., et al. 1994. Jak/STAT pathways and transcriptional activation in response to IFNs and other extracellular signaling proteins. Science 264: 1415-1421.
4. Grossman, A., et al. 1996. Cloning of human lymphocyte-specific interferon regulatory factor (hLSIRF/hIRF4) and mapping of the gene to 6p23-p25. Genomics 37: 229-233.
5. Iida, S., et al. 1997. Deregulation of MUM1/IRF-4 by chromosomal translocation in multiple myeloma. Nat. Genet. 17: 226-230.

CHROMOSOMAL LOCATION

Genetic locus: IRF4 (human) mapping to 6p25.3.

PRODUCT

IRF-4 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IRF-4 shRNA Plasmid (h): sc-35712-SH and IRF-4 shRNA (h) Lentiviral Particles: sc-35712-V as alternate gene silencing products.

For independent verification of IRF-4 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35712A, sc-35712B and sc-35712C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

IRF-4 siRNA (h) is recommended for the inhibition of IRF-4 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

IRF-4 (F-4): sc-48338 is recommended as a control antibody for monitoring of IRF-4 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IRF-4 gene expression knockdown using RT-PCR Primer: IRF-4 (h)-PR: sc-35712-PR (20 µl, 429 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Watanabe, T., et al. 2008. Muramyl dipeptide activation of nucleotide-binding oligomerization domain 2 protects mice from experimental colitis. J. Clin. Invest. 118: 545-559.
2. Sha, Y., et al. 2016. Activated IL-1RI signaling pathway induces Th17 cell differentiation via interferon regulatory factor 4 signaling in patients with relapsing-remitting multiple sclerosis. Front. Immunol. 7: 543.
3. Yamaguchi, R., et al. 2017. Differential regulation of IL-23 production in M1 macrophages by TIR8/SIGIRR through TLR4- or TLR7/8-mediated signaling. Cytokine 99: 310-315.

RESEARCH USE

For research use only, not for use in diagnostic procedures.