

ISGF-3 γ p48 siRNA (h): sc-38013

BACKGROUND

Interferon signaling to the cell nucleus operates through phosphorylation on Tyrosine of proteins that have been designated Stats (signal transducers and activators of transcription). The first members of this family to be described include Stat1 α p91, Stat1 β p84 (a form of p91 that lacks 38 COOH-terminal amino acids) and Stat2 p113. Other members of the family include Stat3, which becomes activated through phosphorylation on Tyrosine as a DNA binding protein in response to epidermal growth factor (EGF) and interleukin-6 (IL-6) but not interferon γ (IFN- γ) and Stat4. Stat1 α p91 (or Stat1 β p84) and p113 form a complex (designated ISGF-3) with p48, a protein that has been shown by sequence analysis to be a member of the interferon regulatory (IRF) family of DNA binding proteins.

REFERENCES

1. Fu, X., et al. 1993. Transcription factor p91 interacts with the epidermal growth factor receptor and mediates activation of the c-fos gene promoter. *Cell* 74: 1135-1145.
2. Shuai, K., et al. 1993. A single phosphotyrosine residue of Stat91 required for gene activation by interferon- γ . *Science* 261: 1744-1746.
3. Zhong, Z., et al. 1994. Stat3: a STAT family member activated by tyrosine phosphorylation in response to epidermal growth factor and interleukin-6. *Science* 264: 95-98.
4. Darnell, J.E., et al. 1994. Jak-STAT pathways and transcriptional activation in response to IFNs and other extracellular signaling proteins. *Science* 264: 1415-1421.

CHROMOSOMAL LOCATION

Genetic locus: IRF9 (human) mapping to 14q12.

PRODUCT

ISGF-3 γ p48 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ISGF-3 γ p48 shRNA Plasmid (h): sc-38013-SH and ISGF-3 γ p48 shRNA (h) Lentiviral Particles: sc-38013-V as alternate gene silencing products.

For independent verification of ISGF-3 γ p48 (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-38013A, sc-38013B and sc-38013C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ISGF-3 γ p48 siRNA (h) is recommended for the inhibition of ISGF-3 γ p48 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 μ M in 66 μ l. 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

ISGF-3 γ p48 (H-10): sc-365893 is recommended as a control antibody for monitoring of ISGF-3 γ p48 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 ISGF-3 γ p48 gene expression knockdown using RT-PCR Primer: ISGF-3 γ p48 (h)-PR: sc-38013-PR (20 μ l, 437 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gerber, S.A. and Pober, J.S. 2008. IFN- α induces transcription of Hypoxia-inducible factor-1 α to inhibit proliferation of human endothelial cells. *J. Immunol.* 181: 1052-1062.
2. Gao, B., et al. 2010. A 5' extended IFN-stimulating response element is crucial for IFN- γ -induced tripartite motif 22 expression via interaction with IFN regulatory factor-1. *J. Immunol.* 185: 2314-2323.
3. Provance, O.K., et al. 2021. Disrupting interferon- α and NF κ B crosstalk suppresses IFITM1 expression attenuating triple-negative breast cancer progression. *Cancer Lett.* 514: 12-29.
4. Kim, T.S., et al. 2022. IFN- γ induces IL-15 *trans*-presentation by epithelial cells via IRF1. *J. Immunol.* 208: 338-346.

RESEARCH USE

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