SANTA CRUZ BIOTECHNOLOGY, INC.

IFN-γ siRNA (m): sc-39607

BACKGROUND

Interferon (IFN)-γ is an antiviral and antiparasitic agent produced by $CD4^+$/$CD8^+$ lymphocytes and natural killer cells that undergo activation by antigens, mitogens or alloantigens. IFN-γ production modulates T cell growth and differentiation and inhibits the growth of B cells. Synthesis of IFN-γ is inducible by IL-2, FGF and EGF. The active form of IFN-γ is a homodimer with each subunit containing six helices. The dimeric structure of human IFN-γ is stabilized by non-covalent interactions through the interface of the helices. IFN-γ translated precursor is 166 amino acids, including the 23 amino acid secretory sequence. Multiple forms exist due to variable glycosylation and under non-denaturing conditions due to dimers and tetramers.

REFERENCES

1. Young, H.A. and Hardy, K.J. 1995. Role of interferon-γ in immune cell regulation. J. Leukoc. Biol. 58: 373-381.
2. Dinarello, C.A., et al. 1998. Overview of interleukin-18: more than an interferon-γ inducing factor. J. Leukoc. Biol. 63: 658-664.
3. Okamura, H., et al. 1998. Regulation of interferon-γ production by IL-12 and IL-18. Curr. Opin. Immunol. 10: 259-264.
4. Costa-Pereira, A.P., et al. 2002. The antiviral response to γ interferon. J. Virol. 76: 9060-9068.
5. Zika, E., et al. 2003. Histone deacetylase 1/mSin3A disrupts γ interferon-induced CIITA function and major histocompatibility complex class II enhanceosome formation. Mol. Cell. Biol. 23: 3091-3102.
6. Sizemore, N., et al. 2004. Inhibitor of κB kinaseis required to activate a subset of interferon-γ-stimulated genes. Proc. Natl. Acad. Sci. USA 101: 7994-7998.
7. Ellis, T.N. and Beaman, B.L. 2004. Interferon-γ activation of polymorphonuclear neutrophil function. Immunology 112: 2-12.
8. Sizemore, N., et al. 2004. Inhibitor of kB kinase is required to activate a subset of interferon-γ-stimulated genes. Proc. Natl. Acad. Sci. USA 101: 7994-7998.

CHROMOSOMAL LOCATION

Genetic locus: Ifng (mouse) mapping to 10 D2.

PRODUCT

IFN-γ siRNA (m) 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 IFN-γ shRNA Plasmid (m): sc-39607-SH and IFN-γ shRNA (m) Lentiviral Particles: sc-39607-V as alternate gene silencing products.

For independent verification of IFN-γ (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39607A, sc-39607B and sc-39607C.

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

IFN-γ siRNA (m) is recommended for the inhibition of IFN-γ expression in mouse 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

IFN-γ (G-30): sc-57208 is recommended as a control antibody for monitoring of IFN-γ 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 IFN-γ gene expression knockdown using RT-PCR Primer: IFN-γ (m)-PR: sc-39607-PR (20 µl, 468 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.