

IFN- α / β R β siRNA (m): sc-40092

BACKGROUND

The type I interferons, IFN- α and IFN- β , are a group of structurally and functionally related proteins that are induced by either viruses or double-stranded RNA and are defined by their ability to confer an antiviral state in cells. IFN- α and IFN- β appear to compete with one another for binding to a common cell surface receptor, while immune IFN (IFN- γ) binds to a distinct receptor. This distinct receptor, IFN- α R, is only weakly responsive to type I interferons, in contrast to IFN- α / β R, which binds to and responds effectively to IFN- β and to several of the IFN- α subtypes. IFN- α / β R is expressed as two alternatively spliced transcripts, designated IFN- α / β R α (IFN- α / β R1) and IFN- α / β R β (IFN- α / β R2), both of which are involved in signal transduction and ligand binding.

REFERENCES

1. Branca, A.A., et al. 1981. Evidence that type I and II interferons have different receptors. *Nature* 294: 768-770.
2. Orchansky, P., et al. 1984. Type I and type II interferon receptors. *J. Interferon Res.* 4: 275-282.
3. Novick, D., et al. 1987. The human interferon- γ receptor, purification, characterization and preparation of antibodies. *J. Biol. Chem.* 262: 8483-8487.
4. Aguet, M., et al. 1988. Molecular cloning and expression of the human interferon- γ receptor. *Cell* 55: 273-280.
5. Soh, J., et al. 1994. Identification and sequence of an accessory factor required for activation of the human interferon- γ receptor. *Cell* 76: 793-802.

CHROMOSOMAL LOCATION

Genetic locus: Ifnar2 (mouse) mapping to 16 C3.3.

PRODUCT

IFN- α / β R β 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IFN- α / β R β shRNA Plasmid (m): sc-40092-SH and IFN- α / β R β shRNA (m) Lentiviral Particles: sc-40092-V as alternate gene silencing products.

For independent verification of IFN- α / β R β (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-40092A, sc-40092B and sc-40092C.

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

IFN- α / β R β siRNA (m) is recommended for the inhibition of IFN- α / β R β 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 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

IFN- α / β R β (F-7): sc-137209 is recommended as a control antibody for monitoring of IFN- α / β R β 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 IFN- α / β R β gene expression knockdown using RT-PCR Primer: IFN- α / β R β (m)-PR: sc-40092-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2016. An endothelial HSP70-TLR4 axis limits Nox3 expression and protects against oxidant injury in lungs. *Antioxid. Redox Signal.* 24: 991-1012.

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.