

HSPA14 siRNA (m): sc-146097

BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multi-protein complexes, the transportation of nascent poly-peptide chains across cellular membranes and the regulation of protein folding. HSPA14 (heat shock 70 kDa protein 14), also known as HSP70-4 or HSP70L1, is a 509 amino acid novel HSP protein derived from human dendritic cells. Belonging to the heat shock protein 70 family, HSPA14 is thought to promote dendritic cell maturation. It is also suggested that HSPA14 stimulates secretion of the proinflammatory cytokines interleukin 12p70 (IL-12p70), IL-1 β , TNF α , and the chemokines IP-10, MIP-1 α , MIP-1 β , and normal T cell expressed and secreted (RANTES).

REFERENCES

- Voellmy, R., et al. 1985. Isolation and functional analysis of a human 70 kDa heat shock protein gene segment. *Proc. Natl. Acad. Sci. USA* 82: 4949-4953.
- Leung, T.K., et al. 1990. The human heat-shock protein family. Expression of a novel heat-inducible HSP 70 (HSP70B') and isolation of its cDNA and genomic DNA. *Biochem. J.* 267: 125-132.
- Milner, C.M. and Campbell, R.D. 1990. Structure and expression of the three MHC-linked HSP 70 genes. *Immunogenetics* 32: 242-251.
- Milner, C.M. and Campbell, R.D. 1992. Polymorphic analysis of the three MHC-linked HSP 70 genes. *Immunogenetics* 36: 357-362.
- Ito, Y., et al. 1998. Genomic structure of the spermatid-specific HSP 70 homolog gene located in the class III region of the major histocompatibility complex of mouse and man. *J. Biochem.* 124: 347-353.
- Wan, T., et al. 2004. Novel heat shock protein HSP70L1 activates dendritic cells and acts as a Th1 polarizing adjuvant. *Blood* 103: 1747-1754.
- Wu, Y., et al. 2005. HSP 70-like protein 1 fusion protein enhances induction of carcinoembryonic antigen-specific CD8⁺ CTL response by dendritic cell vaccine. *Cancer Res.* 65: 4947-4954.

CHROMOSOMAL LOCATION

Genetic locus: Hspa14 (mouse) mapping to 2 A1.

PRODUCT

HSPA14 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 HSPA14 shRNA Plasmid (m): sc-146097-SH and HSPA14 shRNA (m) Lentiviral Particles: sc-146097-V as alternate gene silencing products.

For independent verification of HSPA14 (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-146097A, sc-146097B and sc-146097C.

RESEARCH USE

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

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

HSPA14 siRNA (m) is recommended for the inhibition of HSPA14 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

HSPA14 (G-9): sc-398208 is recommended as a control antibody for monitoring of HSPA14 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 HSPA14 gene expression knockdown using RT-PCR Primer: HSPA14 (m)-PR: sc-146097-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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