SANTA CRUZ BIOTECHNOLOGY, INC.

HSPA1L siRNA (h): sc-95199

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 polypeptide chains across cellular membranes and the regulation of protein folding. HSPA1L (heat shock 70 kDa protein 1L), also known as HSP70T, is a 641 amino acid protein that belongs to the HSP 70 family and, like other HSP proteins, mediates protein folding within the cytosol, as well as within other organelles throughout the cell. HSP proteins, such as HSPA1L, together with chaperones, bind extended peptide segments with a net hydrophobic character exposed during protein translation, membrane translocation or after stress-induced damage. HSPA1L has been found be expressed in spermatids and is not induced by heat shock.

REFERENCES

1. 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.
2. 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.
3. Milner, C.M. and Campbell, R.D. 1990. Structure and expression of the three MHC-linked HSP 70 genes. Immunogenetics 32: 242-251.
4. Milner, C.M. and Campbell, R.D. 1992. Polymorphic analysis of the three MHC-linked HSP 70 genes. Immunogenetics 36: 357-362.

CHROMOSOMAL LOCATION

Genetic locus: HSPA1L (human) mapping to 6p21.33.

PRODUCT

HSPA1L 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 HSPA1L shRNA Plasmid (h): sc-95199-SH and HSPA1L shRNA (h) Lentiviral Particles: sc-95199-V as alternate gene silencing products.

For independent verification of HSPA1L (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-95199A, sc-95199B and sc-95199C.

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

HSPA1L siRNA (h) is recommended for the inhibition of HSPA1L 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

HSPA1L (C-6): sc-393297 is recommended as a control antibody for monitoring of HSPA1L 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 HSPA1L gene expression knockdown using RT-PCR Primer: HSPA1L (h)-PR: sc-95199-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Choi, S.I., et al. 2020. HSPA1L enhances cancer stem cell-like properties by activating IGF1Rβ and regulating β-catenin transcription. Int. J. Mol. Sci. 21: E6957.

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.