

# HSP 10 siRNA (h): sc-40654

## BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multiprotein complexes, transportation of nascent poly-peptide chains across cellular membranes and regulation of protein folding. Heat shock proteins (also known as molecular chaperones) fall into six general families: HSP 90, HSP 70, HSP 60, the low molecular weight HSPs, the immunophilins and the HSP 110 family. The low molecular weight family includes HSP 10, HSP 20, HSP 27, HSP 32 and HSP 40. HSP 10, a 102 amino acid protein, forms a heptameric ring of seven identical subunits. This RING binds at either end of HSP 60 to form a functional heterodimer.

## REFERENCES

- Schlesinger, M.J., et al. 1982. Heat Shock: From Bacteria to Man. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory.
- Zeilstra-Ryalls, J., et al. 1991. The universally conserved GroE (HSP 60) chaperonins. *Annu. Rev. Microbiol.* 45: 301-325.
- Ohtsuka, K. 1993. Cloning of a cDNA for heat-shock protein HSP 40, a human homologue of bacterial DnaJ. *Biochem. Biophys. Res. Commun.* 197: 235-240.
- Georgopoulos, C. and Welch, W.J. 1993. Role of the major heat shock proteins as molecular chaperones. *Annu. Rev. Cell Biol.* 9: 601-634.
- Todd, M.J., et al. 1994. Dynamics of the chaperonin ATPase cycle: implications for facilitated protein folding. *Science* 265: 659-666.
- Massa, M., et al. 2007. Differential recognition of heat-shock protein dnaJ-derived epitopes by effector and Treg cells leads to modulation of inflammation in juvenile idiopathic arthritis. *Arthritis Rheum.* 56: 1648-1657.
- Cardillo, M.R. and Ippoliti, F. 2007. Interleukin-6, interleukin-10 and heat shock protein-90 expression in renal epithelial neoplasias and surrounding normal-appearing renal parenchyma. *Int. J. Immunopathol. Pharmacol.* 20: 37-46.
- Lin, C.C., et al. 2007. Inhibitor of heat-shock protein 90 enhances the antitumor effect of DNA vaccine targeting clients of heat-shock protein. *Mol. Ther.* 15: 404-410.

## CHROMOSOMAL LOCATION

Genetic locus: HSPE1 (human) mapping to 2q33.1.

## PRODUCT

HSP 10 siRNA (h) is a pool of 2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HSP 10 shRNA Plasmid (h): sc-40654-SH and HSP 10 shRNA (h) Lentiviral Particles: sc-40654-V as alternate gene silencing products.

For independent verification of HSP 10 (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-40654A and sc-40654B.

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

## APPLICATIONS

HSP 10 siRNA (h) is recommended for the inhibition of HSP 10 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  $\mu$ M in 66  $\mu$ l. Each contains 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

HSP 10 (D-8): sc-376313 is recommended as a control antibody for monitoring of HSP 10 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HSP 10 gene expression knockdown using RT-PCR Primer: HSP 10 (h)-PR: sc-40654-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.