

HSPA2 siRNA (h): sc-92302

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, the transportation of nascent polypeptide chains across cellular membranes and the regulation of protein folding. HSPA2 (heat shock 70 kDa protein 2), also known as HSP70-2 or HSP70-3, is a 639 amino acid member of the heat shock 70 (HSP 70) family of proteins and is widely expressed with highest levels detected in testis and skeletal muscle. Like other members of the HSP 70 family, HSPA2 cooperates with chaperone proteins to both prevent protein aggregation and mediate the folding of newly expressed polypeptides in the cytosol. Through its ability to chaperone and regulate protein folding, HSPA2 is thought to be crucial for proper sperm maturation and function. Overexpression of HSPA2 is associated with breast cancer, suggesting a possible role for HSPA2 in tumor formation.

REFERENCES

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2. Bonnycastle, L.L., et al. 1994. Cloning, sequencing, and mapping of the human chromosome 14 heat shock protein gene (HSPA2). *Genomics* 23: 85-93.
3. Huszar, G., et al. 2000. Putative creatine kinase M-isoform in human sperm is identified as the 70-kilodalton heat shock protein HSPA2. *Biol. Reprod.* 63: 925-932.
4. Lim, M.C., et al. 2003. gp120 neurotoxicity fails to induce heat shock defenses, while the over expression of HSP 70 protects against gp120. *Brain Res. Bull.* 61: 183-188.
5. Debler, J., et al. 2003. Heat-shock protein HSP70-2 genotypes in patients with Crohn's disease: a more severe clinical course with intestinal complications in presence of the PstI-polymorphism. *Eur. J. Med. Res.* 8: 120-124.
6. Lima, S.B., et al. 2006. Expression of the HSPA2 gene in ejaculated spermatozoa from adolescents with and without varicocele. *Fertil. Steril.* 86: 1659-1663.

CHROMOSOMAL LOCATION

Genetic locus: HSPA2 (human) mapping to 14q23.3.

PRODUCT

HSPA2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HSPA2 shRNA Plasmid (h): sc-92302-SH and HSPA2 shRNA (h) Lentiviral Particles: sc-92302-V as alternate gene silencing products.

For independent verification of HSPA2 (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-92302A, sc-92302B and sc-92302C.

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

HSPA2 siRNA (h) is recommended for the inhibition of HSPA2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HSPA2 gene expression knockdown using RT-PCR Primer: HSPA2 (h)-PR: sc-92302-PR (20 μ 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 for detailed protocols and support products.