SANTA CRUZ BIOTECHNOLOGY, INC.

HSPA12B siRNA (h): sc-75310

BACKGROUND

Heat shock proteins (HSPs) are associated with stress responses and are abundant in cells. HSP 70 is the largest family of HSPs that function as molecular chaperones. HSP 70s are involved in many processes including protein synthesis, folding, assembly, trafficking between cellular compartments and degradation. HSPA12B (heat shock 70 kDa protein 12B) is a 686 amino acid protein that is abundantly expressed in the endothelial cells of muscle and heart, and is also expressed in liver and kidney. HSPA12B belongs to the heat shock protein 70 family because it contains a heat shock protein 70 (HSP 70) ATPase domain. HSPA12B is thought to be involved in angiogenesis, and as such is involved in stress signaling responses concerning wounds. HSPA12B is upregulated in atherosclerotic lesions, which suggests involvement in atherogenesis. However, increased expression of HSPA12B also increases HSP 70 concentrations, suggesting that HSPA12B could be involved in an attempt to protect cells from atherosclerotic damage.

REFERENCES

1. Han, Z., et al. 2003. Two Hsp70 family members expressed in atherosclerotic lesions. Proc. Natl. Acad. Sci. USA 100: 1256-1261.
2. Steagall, R.J., et al. 2006. HSPA12B is predominantly expressed in endothelial cells and required for angiogenesis. Arterioscler. Thromb. Vasc. Biol. 26: 2012-2018.
3. Hu, G., et al. 2006. A novel endothelial-specific heat shock protein HspA12B is required in both zebrafish development and endothelial functions *in vitro*. J. Cell Sci. 119: 4117-4126.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610702. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Howarth, J.L., et al. 2009. HSP70 interacting protein prevents the accumulation of inclusions in polyglutamine disease. J. Neurochem. 108: 945-951.
6. Bao, X.Q., et al. 2009. Induction of heat shock protein 27 and 70 overexpression by bicyclol attenuates concanavalin A-induced liver injury through suppression of NFκB in mice. Mol. Pharmacol. 75: 1180-1188.

CHROMOSOMAL LOCATION

Genetic locus: HSPA12B (human) mapping to 20p13.

PRODUCT

HSPA12B 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 HSPA12B shRNA Plasmid (h): sc-75310-SH and HSPA12B shRNA (h) Lentiviral Particles: sc-75310-V as alternate gene silencing products.

For independent verification of HSPA12B (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-75310A, sc-75310B and sc-75310C.

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

HSPA12B siRNA (h) is recommended for the inhibition of HSPA12B 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

HSPA12B (C-4): sc-393635 is recommended as a control antibody for monitoring of HSPA12B 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 HSPA12B gene expression knockdown using RT-PCR Primer: HSPA12B (h)-PR: sc-75310-PR (20 µl). 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.