SANTA CRUZ BIOTECHNOLOGY, INC.

HSBP1 siRNA (h): sc-62478

BACKGROUND

Prokaryotic and eukaryotic cells respond to thermal and chemical stress by inducing a group of genes collectively designated heat shock genes. In eukaryotes, this gene expression is regulated primarily at the transcription level. Heat shock transcription factors 1 and 2 (HSF1 and HSF2), also designated HSTF1 and HSTF2, are involved in this regulation and are upregulated by estrogen at both the mRNA and protein level. HSF1 is normally found as a monomer, whose transcriptional activity is repressed by constitutive phosphorylation. Upon activation, HSF1 forms trimers, gains DNA binding activity and is translocated to the nucleus. HSBP1 (heat shock factor-binding protein 1), also known as HSF1BP or NPC-A-13 (nasopharyngeal carcinoma-associated antigen 13), is a 76 amino acid nuclear protein that binds HSF1 and acts as a negative regulator of the heat shock response.

REFERENCES

1. Tanguay, R.M. 1988. Transcriptional activation of heat shock genes in eukaryotes. Biochem. Cell Biol. 66: 584-593.
2. Yang, X., et al. 1995. Estrogen dependent expression of heat shock transcription factor: implications for uterine synthesis of heat shock proteins. J. Steroid Biochem. Mol. Biol. 52: 415-419.
3. Wyman, C., et al. 1995. Determination of HSF2 stoichiometry at looped DNA complexes using scanning force microscopy. EMBO J. 14: 117-123.
4. Rallu, M., et al. 1997. Function and regulation of HSF2 during mouse embryogenesis. Proc. Natl. Acad. Sci. USA 94: 2392-2397.
5. Mathew, A., et al. 1998. Heat shock response and protein degradation: regulation of HSF2 by the ubiquiton-proteasome pathway. Mol. Cell. Biol. 18: 5091-5098.
6. He, B., et al. 1998. Glycogen synthase kinase 3β and extracellular signal-regulated kinase inactivate HSF1 by facilitating the disappearance of transcriptionally active granules after heat shock. Mol. Cell. Biol. 18: 6624-6633.
7. Kawazoe, Y., et al. 1998. Proteasome inhibition leads to the activation of all members of the heat shock factor family. Eur. J. Biochem. 255: 356-362.

CHROMOSOMAL LOCATION

Genetic locus: HSBP1 (human) mapping to 16q23.3.

PRODUCT

HSBP1 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 HSBP1 shRNA Plasmid (h): sc-62478-SH and HSBP1 shRNA (h) Lentiviral Particles: sc-62478-V as alternate gene silencing products.

For independent verification of HSBP1 (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-62478A, sc-62478B and sc-62478C.

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

HSBP1 siRNA (h) is recommended for the inhibition of HSBP1 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

HSBP1 (2C3): sc-517153 is recommended as a control antibody for monitoring of HSBP1 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 HSBP1 gene expression knockdown using RT-PCR Primer: HSBP1 (h)-PR: sc-62478-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.