SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 75 siRNA (m): sc-72192

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 polypeptide chains across cellular membranes and regulation of protein folding. Heat shock protein 75 mitochondrial precursor (HSP 75), also called tumor necrosis factor type 1 receptor-associated protein (TRAP1), is a 704 amino acid member of the heat shock protein 90 family. HSP 75 localizes to the mitochondrion and is expressed in a variety of tissues, including skeletal muscle, liver, heart, brain, pancreas, lung and placenta, functioning as a chaperone that expresses an ATPase activity.

REFERENCES

1. Heinen, R.C., et al. 2006. Identification of the divergent calmodulin binding motif in yeast Ssb1/HSP 75 protein and in other HSP70 family members. Braz. J. Med. Biol. Res. 39: 1399-1408.
2. Blank, M., et al. 2006. Stress protein response in two sibling species of Marenzelleria (Polychaeta: Spionidae): is there an influence of acclimation salinity? Comp. Biochem. Physiol. B, Biochem. Mol. Biol. 144: 451-462.
3. Im, C.N., et al. 2007. Iron chelation study in a normal human hepatocyte cell line suggests that tumor necrosis factor receptor-associated protein 1 (TRAP1) regulates production of reactive oxygen species. J. Cell. Biochem. 100: 474-486.
4. Tokalov, S.V., et al. 2007. Varying responses of human cells with discrepant p53 activity to ionizing radiation and heat shock exposure. Cell Prolif. 40: 24-37.
5. Stasyk, T., et al. 2007. Identification of endosomal epidermal growth factor receptor signaling targets by functional organelle proteomics. Mol. Cell. Proteomics 6: 908-922.
6. Hua, G., et al. 2007. Heat shock protein 75 (TRAP1) antagonizes reactive oxygen species generation and protects cells from granzyme M-mediated apoptosis. J. Biol. Chem. 282: 20553-20560.

CHROMOSOMAL LOCATION

Genetic locus: Trap1 (mouse) mapping to 16 A1.

PRODUCT

HSP 75 siRNA (m) 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 HSP 75 shRNA Plasmid (m): sc-72192-SH and HSP 75 shRNA (m) Lentiviral Particles: sc-72192-V as alternate gene silencing products.

For independent verification of HSP 75 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72192A, sc-72192B and sc-72192C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

HSP 75 siRNA (m) is recommended for the inhibition of HSP 75 expression in mouse 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

HSP 75 (TR1): sc-13557 is recommended as a control antibody for monitoring of HSP 75 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 HSP 75 gene expression knockdown using RT-PCR Primer: HSP 75 (m)-PR: sc-72192-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.