SANTA CRUZ BIOTECHNOLOGY, INC.

HSPC300 siRNA (h): sc-78028

BACKGROUND

HSPC300 (haematopoietic stem cell protein 300) is also known as probable protein BRICK1 or C3orf10 (chromosome 3 open reading frame 10) and is a 75 amino acid protein that is expressed as two isoforms and localizes to both the cytoplasm and the cytoskeleton. HSPC300 is thought to regulate cytoskeletal organization and Actin polymerization. Free HSPC300 exists as homotrimers prior to its incorporation into the WAVE complex. The WAVE complex includes five proteins, one of which is HSPC300, that regulate the Arc (Arp2/3 complex) which is responsible for Actin nucleation and is Rac 1-dependent. Because HSPC300 is a highly conserved subunit of the WAVE complex across many species, it is thought to have the same or similar functions in many different organisms. In *Drosophila,* the WAVE/Arc pathway may affect the development of the nervous system. HSPC300 is thought to localize to axons of the central nervous system of *Drosophila* embryos and thus may also be involved in axonogenesis. In addition, HSPC300 is thought to be necessary for synaptic morphogenesis by motoneurons. In mice, the knockout of the WAVE complex leads to learning and memory defects, and it is therefore hypothesized that HSPC300 may also be involved in cognitive functions. Genetic depletion of HSPC300 results in cytoskeletal abnormalities and prevents cytokinesis of cells, suggesting that decreased levels of HSPC300 may be associated with tumor suppression.

REFERENCES

1. Eden, S., et al. 2002. Mechanism of regulation of WAVE1-induced Actin nucleation by Rac 1 and Nck. Nature 418: 790-793.
2. Maranchie, F.F. 2004. Solid renal tumor severity in von Hippel Lindau disease is related to germline deletion length and location. Hum. Mutat. 23: 40-46.
3. Gautreau, A., et al. 2004. Purification and architecture of the ubiquitous WAVE complex. Proc. Natl. Acad. Sci. USA 101: 4379-4383.

CHROMOSOMAL LOCATION

Genetic locus: BRK1 (human) mapping to 3p25.3.

PRODUCT

HSPC300 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 HSPC300 shRNA Plasmid (h): sc-78028-SH and HSPC300 shRNA (h) Lentiviral Particles: sc-78028-V as alternate gene silencing products.

For independent verification of HSPC300 (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-78028A, sc-78028B and sc-78028C.

PROTOCOLS

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

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

HSPC300 siRNA (h) is recommended for the inhibition of HSPC300 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

HSPC300 (G-4): sc-390459 is recommended as a control antibody for monitoring of HSPC300 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 HSPC300 gene expression knockdown using RT-PCR Primer: HSPC300 (h)-PR: sc-78028-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.