SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein S19 siRNA (h): sc-61474

BACKGROUND

Ribosomal subunits are synthesized in the nucleus and mature 40S and 60S subunits are exported stoichiometrically into the cytoplasm. Together these subunits are composed of four RNA species and approximately 80 structurally distinct proteins. Ribosomal proteins have the ability to pass through the nuclear envelope in the native state, making them the largest of the structures accommodated by the nuclear pore complexes. The nuclear export of ribosomal subunits is a unidirectional, saturable and energy-dependent process. Ribosomal Protein S19 (RPS19) is a 145 amino acids protein expressed in various human adult tissues, including bone marrow, peripheral blood, spleen, liver and nonhematopoietic tissues. RPS19 expression decreases during terminal erythroid differentiation; a deficiency of RPS19 blocks proliferation of immature erythroid progenitor cells altogether. Muta-tions in the RPS19 gene are linked with Diamond-Blackfan anemia (DBA), a congenital, hypo-plastic, red cell aplasia that occasionally presents with physical anomalies.

REFERENCES

1. Subramanian, S., et al. 2001. Truncated and dispersed RPL2 and RPS19 pseudogenes are cotranscribed with neighboring downstream genes in wheat mitochondria. Curr. Genet. 39: 264-272.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603474. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Da Costa, L., et al. 2003. Nucleolar localization of RPS19 protein in normal cells and mislocalization due to mutations in the nucleolar localization signals in two Diamond-Blackfan anemia patients: potential insights into pathophysiology. Blood 101: 5039-5045.
4. Goncalves, P., et al. 2004. Gene symbol: RPS19. Disease: Diamond-Blackfan anemia. Hum. Genet. 115: 534.
5. Ebert, B.L., et al. 2005. An RNA interference model of RPS19 deficiency in Diamond-Blackfan anemia recapitulates defective hematopoiesis and rescue by dexamethasone: identification of dexamethasone-responsive genes by microarray. Blood 105: 4620-4626.

CHROMOSOMAL LOCATION

Genetic locus: RPS19 (human) mapping to 19q13.2.

PRODUCT

Ribosomal Protein S19 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 Ribosomal Protein S19 shRNA Plasmid (h): sc-61474-SH and Ribosomal Protein S19 shRNA (h) Lentiviral Particles: sc-61474-V as alternate gene silencing products.

For independent verification of Ribosomal Protein S19 (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-61474A, sc-61474B and sc-61474C.

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

Ribosomal Protein S19 siRNA (h) is recommended for the inhibition of Ribosomal Protein S19 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

Ribosomal Protein S19 (WW-4): sc-100836 is recommended as a control antibody for monitoring of Ribosomal Protein S19 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 Ribosomal Protein S19 gene expression knockdown using RT-PCR Primer: Ribosomal Protein S19 (h)-PR: sc-61474-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.