SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein S3A siRNA (h): sc-61476

BACKGROUND

Ribosomal subunits are synthesized in the nucleus, and mature 40S and 60S subunits are exported stoichiometrically into the cytoplasm. Both the 40S and 60S subunits are composed of four RNA species and approximately 80 structurally distinct proteins. Mitochondrial ribosomes consist of a small 28S subunit and a large 39S subunit. Ribosomal proteins have the ability to pass through the nuclear envelope in the native state, making them the largest of the structures accomodated by the nuclear pore complexes. The nuclear export of ribosomal subunits is a unidirectional, saturable and energy-dependent process. Ribosomal Protein S3A, a component of the 40S subunit that belongs to the S3AE family of ribosomal proteins, localizes to the cytoplasm. RPS3A, the gene encoding for the Ribosomal Protein S3A, contains six exons and five introns spanning 5,013 bp and maps to chromosome 4q31.3.

REFERENCES

1. Nolte, D., Taimor, G., Kalff-Suske, M. and Seifart, K.H. 1996. The human S3A ribosomal protein: sequence, location and cell-free transcription of the functional gene. Gene 169: 179-185.
2. Vladimirov, S.N., Ivanov, A.V., Karpova, G.G., Musolyamov, A.K., Egorov, T.A., Thiede, B., Wittmann-Liebold, B. and Otto, A. 1996. Characterization of the human small-ribosomal-subunit proteins by N-terminal and internal sequencing, and mass spectrometry. Eur. J. Biochem. 239: 144-149.
3. Kenmochi, N., Kawaguchi, T., Rozen, S., Davis, E., Goodman, N., Hudson, T.J., Tanaka, T. and Page, D.C. 1998. A map of 75 human ribosomal protein genes. Genome Res. 8: 509-523.
4. Jäkel, S., Mingot, J.M., Schwarzmaier, P., Hartmann, E. and Görlich, D. 2002. Importins fulfill a dual function as nuclear import receptors and cytoplasmic chaperones for exposed basic domains. EMBO J. 21: 377-386.
5. Yanaihara, A., Otsuka, Y., Iwasaki, S., Koide, K., Aida, T. and Okai, T. 2004. Comparison in gene expression of secretory human endometrium using laser microdissection. Reprod. Biol. Endocrinol. 2: 66.
6. Rush, J., Moritz, A., Lee, K.A., Guo, A., Goss, V.L., Spek, E.J., Zhang, H., Zha, X.M., Polakiewicz, R.D. and Comb, M.J. 2005. Immunoaffinity profiling of tyrosine phosphorylation in cancer cells. Nat. Biotechnol. 23: 94-101.
7. Bulygin, K., Chavatte, L., Frolova, L., Karpova, G. and Favre, A. 2005. The first position of a codon placed in the A site of the human 80S ribosome contacts nucleotide C1696 of the 18S rRNA as well as proteins S2, S3, S3a, S30, and S15. Biochemistry 44: 2153-2162.
8. Slizhikova, D.K., Vinogradova, T.V. and Sverdlov, E.D. 2005. The NOLA2 and RPS3A genes as highly informative markers for human squamous cell lung cancer. Bioorg. Khim. 31: 195-199.

CHROMOSOMAL LOCATION

Genetic locus: RPS3A (human) mapping to 4q31.3.

PROTOCOLS

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

PRODUCT

Ribosomal Protein S3A 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 S3A shRNA Plasmid (h): sc-61476-SH and Ribosomal Protein S3A shRNA (h) Lentiviral Particles: sc-61476-V as alternate gene silencing products.

For independent verification of Ribosomal Protein S3A (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-61476A, sc-61476B and sc-61476C.

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 S3A siRNA (h) is recommended for the inhibition of Ribosomal Protein S3A 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Ribosomal Protein S3A gene expression knockdown using RT-PCR Primer: Ribosomal Protein S3A (h)-PR: sc-61476-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.