SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein S5 siRNA (h): sc-97457

BACKGROUND

Ribosomes, the organelles that catalyze protein synthesis, are composed of a small subunit (40S) and a large subunit (60S) that consist of over 80 distinct ribosomal proteins. Mammalian ribosomal proteins are encoded by multi-gene families that contain processed pseudogenes and one functional intron-containing gene within their coding regions. Ribosomal Protein S5, also known as RPS5, is a 204 amino acid component of the 40S complex. Localized to the cytoplasm, Ribosomal Protein S5 belongs to the S7P family of ribosomal proteins and functions in protein synthesis. Like most ribosomal proteins, Ribosomal Protein S5 exists as multiple processed pseudogenes that are scattered throughout the genome. Ribosomal Protein S5 is expressed at variable amounts in colorectal cancer cells, suggesting a possible role in carconigenesis.

REFERENCES

1. Hori, N., et al. 1993. A cDNA sequence of human ribosomal protein, homologue of yeast S28. Nucleic Acids Res. 21: 4394.
2. Kenmochi, N., et al. 1998. A map of 75 human ribosomal protein genes. Genome Res. 8: 509-523.
3. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 603683. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Yoshihama, M., et al. 2002. The human ribosomal protein genes: sequencing and comparative analysis of 73 genes. Genome Res. 12: 379-390.
5. Galkin, O., et al. 2007. Roles of the negatively charged N-terminal extension of *Saccharomyces cerevisiae* Ribosomal Protein S5 revealed by characterization of a yeast strain containing human Ribosomal Protein S5. RNA 13: 2116-2128.
6. Matragkou, C.N., et al. 2008. The potential role of Ribosomal Protein S5 on cell cycle arrest and initiation of murine erythroleukemia cell differentiation. J. Cell. Biochem. 104: 1477-1490.

CHROMOSOMAL LOCATION

Genetic locus: RPS5 (human) mapping to 19q13.43.

PRODUCT

Ribosomal Protein S5 siRNA (h) is a pool of 2 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 S5 shRNA Plasmid (h): sc-97457-SH and Ribosomal Protein S5 shRNA (h) Lentiviral Particles: sc-97457-V as alternate gene silencing products.

For independent verification of Ribosomal Protein S5 (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-97457A and sc-97457B.

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

Ribosomal Protein S5 siRNA (h) is recommended for the inhibition of Ribosomal Protein S5 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 S5 (A-8): sc-390935 is recommended as a control antibody for monitoring of Ribosomal Protein S5 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 S5 gene expression knockdown using RT-PCR Primer: Ribosomal Protein S5 (h)-PR: sc-97457-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.