SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein S14 siRNA (m): sc-62967

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 multigene families that contain processed pseudogenes and one functional intron-containing gene within their coding regions. Ribosomal Protein S14, also known as RPS14 or EMTB, is a 151 amino acid component of the small ribosomal 40S subunit. Localized to the cytoplasm, Ribosomal Protein S14 is a member of the S11P family of ribosomal proteins and is highly conserved among several species. Defects in the gene encoding Ribosomal Protein S14 may cause resistance to emetine, a protein synthesis inhibitor found in Chinese hamster ovary cells. Multiple isoforms of this protein exist due to alternative splicing events.

REFERENCES

1. Martin-Nieto, J. and Roufa, D.J. 1997. Functional analysis of human RPS14 null alleles. J. Cell Sci. 110: 955-963.
2. Fewell, S.W. 1999. Ribosomal Protein S14 of *Saccharomyces cerevisiae* regulates its expression by binding to RPS14B pre-mRNA and to 18S rRNA. Mol. Cell. Biol. 19: 826-834.
3. Kubo, N., et al. 1999. A single nuclear transcript encoding mitochondrial RPS14 and SDHB of rice is processed by alternative splicing: common use of the same mitochondrial targeting signal for different proteins. Proc. Natl. Acad. Sci. USA 96: 9207-9211.
4. Figueroa, P., et al. 2000. The nuclear-encoded SDH2-RPS14 precursor is proteolytically processed between SDH2 and RPS14 to generate maize mitochondrial RPS14. Biochem. Biophys. Res. Commun. 271: 380-385.
5. Antúnez de Mayolo, P. 2003. Interactions of yeast ribosomal protein rpS14 with RNA. J. Mol. Biol. 333: 697-709.
6. Jakovljevic, J., et al. 2004. The carboxy-terminal extension of yeast ribosomal protein S14 is necessary for maturation of 43S preribosomes. Mol. Cell 14: 331-342.

CHROMOSOMAL LOCATION

Genetic locus: Rps14 (mouse) mapping to 18 E1.

PRODUCT

Ribosomal Protein S14 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 Ribosomal Protein S14 shRNA Plasmid (m): sc-62967-SH and Ribosomal Protein S14 shRNA (m) Lentiviral Particles: sc-62967-V as alternate gene silencing products.

For independent verification of Ribosomal Protein S14 (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-62967A, sc-62967B and sc-62967C.

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 S14 siRNA (m) is recommended for the inhibition of Ribosomal Protein S14 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

Ribosomal Protein S14 (3G5): sc-293478 is recommended as a control antibody for monitoring of Ribosomal Protein S14 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 S14 gene expression knockdown using RT-PCR Primer: Ribosomal Protein S14 (m)-PR: sc-62967-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.