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SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein L4 siRNA (m): sc-152923

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 L4, also known as RPL4 or RPL1, is a 427 amino acid cytoplasmic protein that is part of the large 60S ribosomal subunit complex. A member of the L4E family of ribosomal proteins, Ribosomal Protein L4 is thought to interact with the multifunctional nucleolar protein RNA helicase II (DDX21) and, through this interaction, may mediate the involvement of DDX21 in rRNA processing. Like most other ribosomal proteins, Ribosomal Protein L4 exists as multiple processed pseudogenes that are scattered throughout the genome.

REFERENCES

1. Bagni, C., et al. 1993. Human ribosomal protein L4: cloning and sequencing of the cDNA and primary structure of the protein. Biochim. Biophys. Acta 1216: 475-478.
2. Kajikawa, S., et al. 1998. Increased expression of rat ribosomal protein L4 mRNA in 5-azacytidine-treated PC12 cells prior to apoptosis. Biochem. Biophys. Res. Commun. 252: 220-224.
3. Kenmochi, N., et al. 1998. A map of 75 human ribosomal protein genes. Genome Res. 8: 509-523.
4. Trifa, Y., et al. 1998. The nuclear RPL4 gene encodes a chloroplast protein that co-purifies with the T7-like transcription complex as well as plastid ribosomes. J. Biol. Chem. 273: 3980-3985.
5. Yoshihama, M., et al. 2002. The human ribosomal protein genes: sequencing and comparative analysis of 73 genes. Genome Res. 12: 379-390.
6. Ueno, M., et al. 2002. Expression of ribosomal protein L4 (rpL4) during neurogenesis and 5-azacytidine (5AzC)-induced apoptotic process in the rat. Histol. Histopathol. 17: 789-798.
7. Yang, H., et al. 2005. Functional interaction between RNA helicase II/Guα and ribosomal protein L4. FEBS J. 272: 3788-3802.

CHROMOSOMAL LOCATION

Genetic locus: Rpl4 (mouse) mapping to 9 C.

PRODUCT

Ribosomal Protein L4 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 L4 shRNA Plasmid (m): sc-152923-SH and Ribosomal Protein L4 shRNA (m) Lentiviral Particles: sc-152923-V as alternate gene silencing products.

For independent verification of Ribosomal Protein L4 (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-152923A, sc-152923B and sc-152923C.

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 L4 siRNA (m) is recommended for the inhibition of Ribosomal Protein L4 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 L4 (RQ-7): sc-100838 is recommended as a control antibody for monitoring of Ribosomal Protein L4 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 L4 gene expression knockdown using RT-PCR Primer: Ribosomal Protein L4 (m)-PR: sc-152923-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.