SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein LP0 siRNA (h): sc-106507

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. Ribosomal Protein LP0, also known as RPLP0, P0, L10E or RPP0, is a 317 amino acid cytoplasmic protein that is the human ortholog of the yeast L10 ribosomal protein. One of several components of the 60S ribosomal subunit, Ribosomal Protein LP0 functions as a neutral phosphoprotein that shares high similarity with Ribosomal Protein LP1 and Ribosomal Protein LP2. Together, these proteins form a pentameric complex (comprised of LP1 and LP2 dimers and one LP0 monomer) that regulates ribosome assembly and plays a role in translation initiation. Overexpression of Ribosomal Protein LP0 is associated with liver and breast cancer, suggesting a role for Ribosomal Protein LP0 in tumorigenesis. Like other mammalian ribosomal proteins, Ribosomal Protein LP0 exists as multiple processed pseudogenes that are found throughout the genome.

REFERENCES

1. Rich, B.E., et al. 1987. Human acidic ribosomal phosphoproteins P0, P1, and P2: analysis of cDNA clones, *in vitro* synthesis, and assembly. Mol. Cell. Biol. 7: 4065-4074.
2. Chan, S.H., et al. 2001. Trichosanthin interacts with acidic ribosomal proteins P0 and P1 and mitotic checkpoint protein MAD2B. Eur. J. Biochem. 268: 2107-2112.
3. Mazumder, B., et al. 2003. Regulated release of L13a from the 60S ribosomal subunit as a mechanism of transcript-specific translational control. Cell 115: 187-198.
4. Tchórzewski, M., et al. 2003. The subcellular distribution of the human ribosomal "stalk" components: P1, P2 and P0 proteins. Int. J. Biochem. Cell Biol. 35: 203-211.
5. Kapp, L.D., et al. 2004. The molecular mechanics of eukaryotic translation. Annu. Rev. Biochem. 73: 657-704.
6. Abo, Y., et al. 2004. Baculovirus-mediated expression and isolation of human ribosomal phosphoprotein P0 carrying a GST-tag in a functional state. Biochem. Biophys. Res. Commun. 322: 814-819.

CHROMOSOMAL LOCATION

Genetic locus: RPLP0 (human) mapping to 12q24.23.

PRODUCT

Ribosomal Protein LP0 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 LP0 shRNA Plasmid (h): sc-106507-SH and Ribosomal Protein LP0 shRNA (h) Lentiviral Particles: sc-106507-V as alternate gene silencing products.

For independent verification of Ribosomal Protein LP0 (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-106507A and sc-106507B.

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 LP0 siRNA (h) is recommended for the inhibition of Ribosomal Protein LP0 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 LP0 (1B4): sc-293260 is recommended as a control antibody for monitoring of Ribosomal Protein LP0 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 LP0 gene expression knockdown using RT-PCR Primer: Ribosomal Protein LP0 (h)-PR: sc-106507-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.