SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein LP2 siRNA (h): sc-96353

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 LP2 (60S acidic ribosomal protein P2, RPLP2) is a 115 amino acid acidic protein that belongs to the Ribosomal Protein L12P family. A key component during the elongation step of protein synthesis, Ribosomal Protein LP2 is part of a pentameric complex (in conjunction with LP1 and LP0) that regulates ribosome assembly and plays a role in translation initiation. Like other mammalian ribosomal proteins, Ribosomal Protein LP2 exists as multiple processed pseudogenes that are found throughout the genome.

REFERENCES

1. Rich, B.E. and Steitz, J.A. 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. Yoshihama, M., et al. 2002. The human ribosomal protein genes: sequencing and comparative analysis of 73 genes. Genome Res. 12: 379-390.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 180520. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. 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.
5. 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.
6. Kapp, L.D. and Lorsch, J.R. 2004. The molecular mechanics of eukaryotic translation. Annu. Rev. Biochem. 73: 657-704.
7. Martinez-Azorin, F., et al. 2008. Functional characterization of ribosomal P1/P2 proteins in human cells. Biochem. J. 413: 527-534.

CHROMOSOMAL LOCATION

Genetic locus: RPLP2 (human) mapping to 11p15.5.

PRODUCT

Ribosomal Protein LP2 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 LP2 shRNA Plasmid (h): sc-96353-SH and Ribosomal Protein LP2 shRNA (h) Lentiviral Particles: sc-96353-V as alternate gene silencing products.

For independent verification of Ribosomal Protein LP2 (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-96353A and sc-96353B.

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 LP2 siRNA (h) is recommended for the inhibition of Ribosomal Protein LP2 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 LP2 gene expression knockdown using RT-PCR Primer: Ribosomal Protein LP2 (h)-PR: sc-96353-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yang, H.W., et al. 2018. Senescent cells differentially translate senescence-related mRNAs via ribosome heterogeneity. J. Gerontol. A Biol. Sci. Med. Sci. 74: 1015-1024.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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