SANTA CRUZ BIOTECHNOLOGY, INC.

Ribosomal Protein L7 siRNA (h): sc-77708

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 L7, also known as 60S ribosomal protein L7, RPL7, humL7-1 or MGC117326, is a 248 amino acid protein which localizes to the cytoplasm and attaches to G-rich structures in mRNAs and in 28S rRNA. Ribosomal Protein L7 is a member of the ribosomal protein L30P family and has been found to be an autoantigen in patients with systemic autoimmune diseases, including systemic lupus erythematosus. Ribosomal Protein L7 inhibits cell-free translation of mRNAs and has a regulatory function in the translation apparatus. The gene encoding human Ribosomal Protein L7 maps to human chromosome 8q21.11 and like most ribosomal proteins, Ribosomal Protein L7 exists as multiple processed pseudogenes that are scattered throughout the genome.

REFERENCES

1. Meyuhas, O. and Klein, A. 1990. The mouse Ribosomal Protein L7 gene. Its primary structure and functional analysis of the promoter region. J. Biol. Chem. 265: 11465-11473.
2. Hemmerich, P., et al. 1993. Structural and functional properties of Ribosomal Protein L7 from humans and rodents. Nucleic Acids Res. 21: 223-231.
3. Sapi, E., et al. 1994. The first intron of human c-fms proto-oncogene contains a processed pseudogene (RPL7P) for Ribosomal Protein L7. Genomics 22: 641-645.
4. von Mikecz, A., et al. 1994. Characterization of eukaryotic protein L7 as a novel autoantigen which frequently elicits an immune response in patients suffering from systemic autoimmune disease. Immunobiology 192: 137-154.
5. Neu, E., et al. 1995. Autoantibodies against eukaryotic protein L7 in patients suffering from systemic lupus erythematosus and progressive systemic sclerosis: frequency and correlation with clinical, serological and genetic parameters. The SLE Study Group. Clin. Exp. Immunol. 100: 198-204.

CHROMOSOMAL LOCATION

Genetic locus: RPL7 (human) mapping to 8q21.11.

PRODUCT

Ribosomal Protein L7 siRNA (h) 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 L7 shRNA Plasmid (h): sc-77708-SH and Ribosomal Protein L7 shRNA (h) Lentiviral Particles: sc-77708-V as alternate gene silencing products.

For independent verification of Ribosomal Protein L7 (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-77708A, sc-77708B and sc-77708C.

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 L7 siRNA (h) is recommended for the inhibition of Ribosomal Protein L7 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 L7 gene expression knockdown using RT-PCR Primer: Ribosomal Protein L7 (h)-PR: sc-77708-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.

PROTOCOLS

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