

Ribosomal Protein S7 siRNA (m): sc-152952

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 S7, also known as RPS7, is a 194 amino acid protein that is a component of the 40S subunit. Localized to the cytoplasm, Ribosomal Protein S7 belongs to the S7E family of ribosomal proteins and functions in protein synthesis. Ribosomal Protein S7 interacts with MDM2 and is believed to negatively regulate the MDM2-mediated degradation of p53. In addition, Ribosomal Protein S7 may play a role in ribosomal stress, linking ribosome biogenesis to cell death or cell cycle arrest. Like most ribosomal proteins, Ribosomal Protein S7 exists as multiple processed pseudogenes that are scattered throughout the genome.

REFERENCES

1. Annino, T., et al. 1995. The human Ribosomal Protein S7-encoding gene: isolation, structure and localization in 2p25. *Gene* 165: 297-302.
2. Kenmochi, N., et al. 1998. A map of 75 human ribosomal protein genes. *Genome Res.* 8: 509-523.
3. Malygin, A.A., et al. 2000. Proteins S7, S10, S16 and S19 of the human 40S ribosomal subunit are most resistant to dissociation by salt. *Biochim. Biophys. Acta* 1494: 213-216.
4. Hosaka, H., et al. 2001. The structure of the archaeobacterial Ribosomal Protein S7 and its possible interaction with 16S rRNA. *J. Biochem.* 130: 695-701.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603658. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Xu, W.Y., et al. 2003. The internal control role of Ribosomal Protein S7 in the defense of *Anopheles dirus* against *Plasmodium* infection. *Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi* 21: 264-267.
7. Grondek, J.F. and Culver, G.M. 2004. Assembly of the 30S ribosomal subunit: positioning ribosomal protein S13 in the S7 assembly branch. *RNA*. 10: 1861-1866.

CHROMOSOMAL LOCATION

Genetic locus: Rps7 (mouse) mapping to 12 A2.

PRODUCT

Ribosomal Protein S7 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Ribosomal Protein S7 shRNA Plasmid (m): sc-152952-SH and Ribosomal Protein S7 shRNA (m) Lentiviral Particles: sc-152952-V as alternate gene silencing products.

RESEARCH USE

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Ribosomal Protein S7 siRNA (m) is recommended for the inhibition of Ribosomal Protein S7 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 μ M in 66 μ l. 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 S7 (E-1): sc-377317 is recommended as a control antibody for monitoring of Ribosomal Protein S7 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 S7 gene expression knockdown using RT-PCR Primer: Ribosomal Protein S7 (m)-PR: sc-152952-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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