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Ribosomal Protein S24 siRNA (m): sc-152943

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 S24, also known as DBA3 or RPS24, is a 133 amino acid member of the Ribosomal Protein S24e family. Ribosomal Protein S24 is expressed in mature tissue including adult brain, skeletal muscle, heart, and kidney with low expression in tissues with a significant number of proliferating cells such as fetal brain, placenta and bone marrow. Ribosomal Protein S24 is essential for the processing of pre-rRNA and maturation of 40S ribosomal subunits. Mutations in the gene encoding Ribosomal Protein S24 lead to Diamond-Blackfan anemia type 3 (DBA3), a congenital non-regenerative hypoplastic anemia that usually becomes apparent early in infancy and is characterized by moderate to severe macrocytic anemia, erythroblastopenia and an increased risk of malignancy.

REFERENCES

1. Leer, R.J., et al. 1985. The genes for yeast Ribosomal Proteins S24 and L46 are adjacent and divergently transcribed. *Nucleic Acids Res.* 13: 701-709.
2. Lutsch, G., et al. 1990. Immunoelectron microscopic studies on the location of ribosomal proteins on the surface of the 40S ribosomal subunit from rat liver. *Eur. J. Cell Biol.* 51: 140-150.
3. Chan, Y.L., et al. 1990. The primary structure of rat Ribosomal Protein S24. *FEBS Lett.* 262: 253-255.
4. Brown, S.J., et al. 1990. A cDNA encoding human Ribosomal Protein S24. *Gene* 91: 293-296.
5. Ro, H.S. and Xu, L. 1991. Nucleotide sequences of a cDNA clone encoding mouse Ribosomal Protein S24. *Nucleic Acids Res.* 19: 6647.
6. Gazda, H.T., et al. 2006. Ribosomal Protein S24 gene is mutated in Diamond-Blackfan anemia. *Am. J. Hum. Genet.* 79: 1110-1118.

CHROMOSOMAL LOCATION

Genetic locus: Rps24 (mouse) mapping to 14 A3.

PRODUCT

Ribosomal Protein S24 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Ribosomal Protein S24 shRNA Plasmid (m): sc-152943-SH and Ribosomal Protein S24 shRNA (m) Lentiviral Particles: sc-152943-V as alternate gene silencing products.

For independent verification of Ribosomal Protein S24 (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-152943A and sc-152943B.

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 S24 siRNA (m) is recommended for the inhibition of Ribosomal Protein S24 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Ribosomal Protein S24 gene expression knockdown using RT-PCR Primer: Ribosomal Protein S24 (m)-PR: sc-152943-PR (20 μ l). 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.