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# Ribosomal Protein S10 siRNA (m): sc-152931

## 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 S10 (RPS10) is a 165 amino acid component of the small ribosomal 40S subunit. While generally found in the cytoplasm, RPS10 can localize to the granular component (GC) region of the nucleolus. For this to occur, methylation by PRMT5 is required as well as an interaction with NPS1. Defects in RPS10 are the cause of Diamond-Blackfan anemia type 9 (DBA9). It is a form of Diamond-Blackfan anemia, a congenital non-regenerative hypoplastic anemia that usually presents early in infancy. Diamond-Blackfan anemia is characterized by a moderate to severe macrocytic anemia, erythroblastopenia, and an increased risk of malignancy.

## REFERENCES

1. Wang, B., et al. 2008. Evaluation of the low-specificity protease elastase for large-scale phosphoproteome analysis. *Anal. Chem.* 80: 9526-9533.
2. Daub, H., et al. 2008. Kinase-selective enrichment enables quantitative phosphoproteomics of the kinome across the cell cycle. *Mol. Cell* 31: 438-448.
3. Dephoure, N., et al. 2008. A quantitative atlas of mitotic phosphorylation. *Proc. Natl. Acad. Sci. USA* 105: 10762-10767.
4. Heibeck, T.H., et al. 2009. An extensive survey of tyrosine phosphorylation revealing new sites in human mammary epithelial cells. *J. Proteome Res.* 8: 3852-3861.
5. Mayya, V., et al. 2009. Quantitative phosphoproteomic analysis of T cell receptor signaling reveals system-wide modulation of protein-protein interactions. *Sci. Signal.* 2: ra46.
6. Doherty, L., et al. 2010. Ribosomal protein genes RPS10 and RPS26 are commonly mutated in Diamond-Blackfan anemia. *Am. J. Hum. Genet.* 86: 222-228.
7. Ren, J., et al. 2010. Methylation of Ribosomal Protein S10 by protein-arginine methyltransferase 5 regulates ribosome biogenesis. *J. Biol. Chem.* 285: 12695-12705.

## CHROMOSOMAL LOCATION

Genetic locus: Rps10 (mouse) mapping to 17 A3.3.

## PRODUCT

Ribosomal Protein S10 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Ribosomal Protein S10 shRNA Plasmid (m): sc-152931-SH and Ribosomal Protein S10 shRNA (m) Lentiviral Particles: sc-152931-V as alternate gene silencing products.

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

## APPLICATIONS

Ribosomal Protein S10 siRNA (m) is recommended for the inhibition of Ribosomal Protein S10 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  $\mu$ M in 66  $\mu$ 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 S10 (A-10): sc-515655 is recommended as a control antibody for monitoring of Ribosomal Protein S10 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 S10 gene expression knockdown using RT-PCR Primer: Ribosomal Protein S10 (m)-PR: sc-152931-PR (20  $\mu$ 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.