

MRP-S30 siRNA (m): sc-149629

BACKGROUND

Mitochondrial ribosomes consist of a large 39S subunit and a small 28S subunit, both of which are comprised of multiple mitochondrial ribosomal proteins (MRPs) that are encoded by nuclear genes and are essential for protein synthesis within mitochondria. MRP-S30 (mitochondrial ribosomal protein S30), also known as PDCD9 (programmed cell death protein 9), is a 439 amino acid protein that localizes to the mitochondrion, where it exists as a component of the 28S ribosomal subunit and works in conjunction with other MRPs to mediate protein synthesis. MRP-S30 is expressed in kidney, liver, heart and skeletal muscle. The gene encoding MRP-S30 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm or of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Kenmochi, N., Suzuki, T., Uechi, T., Magoori, M., Kuniba, M., Higa, S., Watanabe, K. and Tanaka, T. 2001. The human mitochondrial ribosomal protein genes: mapping of 54 genes to the chromosomes and implications for human disorders. *Genomics* 77: 65-70.
2. Cavdar Koc, E., Burkhart, W., Blackburn, K., Moseley, A. and Spremulli, L.L. 2001. The small subunit of the mammalian mitochondrial ribosome. Identification of the full complement of ribosomal proteins present. *J. Biol. Chem.* 276: 19363-19374.
3. Suzuki, T., Terasaki, M., Takemoto-Hori, C., Hanada, T., Ueda, T., Wada, A. and Watanabe, K. 2001. Proteomic analysis of the mammalian mitochondrial ribosome. Identification of protein components in the 28S small subunit. *J. Biol. Chem.* 276: 33181-33195.
4. Zhang, Z. and Gerstein, M. 2003. Identification and characterization of over 100 mitochondrial ribosomal protein pseudogenes in the human genome. *Genomics* 81: 468-480.
5. Katoh, Y. and Katoh, M. 2005. Comparative genomics on FGF7, FGF10, FGF22 orthologs, and identification of fgf25. *Int. J. Mol. Med.* 16: 767-770.
6. Stacey, S.N., Manolescu, A., Sulem, P., Thorlacius, S., Gudjonsson, S.A., Jonsson, G.F., Jakobsdottir, M., Berghthorsson, J.T., Gudmundsson, J., Aben, K.K., Strobbe, L.J., Swinkels, D.W., et al. 2008. Common variants on chromosome 5p12 confer susceptibility to estrogen receptor-positive breast cancer. *Nat. Genet.* 40: 703-706.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 611991. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Woolcott, C.G., Maskarinec, G., Haiman, C.A., Verheus, M., Pagano, I.S., Le Marchand, L., Henderson, B.E. and Kolonel, L.N. 2009. Association between breast cancer susceptibility loci and mammographic density: the Multiethnic Cohort. *Breast Cancer Res.* 11: R10.
9. Sadkowski, T., Jank, M., Zwierzchowski, L., Oprzadek, J. and Motyl, T. 2009. Comparison of skeletal muscle transcriptional profiles in dairy and beef breeds bulls. *J. Appl. Genet.* 50: 109-123.

CHROMOSOMAL LOCATION

Genetic locus: Mrps30 (mouse) mapping to 13 D2.3.

PRODUCT

MRP-S30 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 MRP-S30 shRNA Plasmid (m): sc-149629-SH and MRP-S30 shRNA (m) Lentiviral Particles: sc-149629-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 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

MRP-S30 siRNA (m) is recommended for the inhibition of MRP-S30 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 MRP-S30 gene expression knockdown using RT-PCR Primer: MRP-S30 (m)-PR: sc-149629-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.