SANTA CRUZ BIOTECHNOLOGY, INC.

MRP-L12 siRNA (h): sc-93743

BACKGROUND

MRP-L12 (mitochondrial ribosomal protein-L12), also referred to as 5c5-2, L12mt, MRPL7 or RPML12, is a mammalian mitochondrial ribosomal protein that is involved in protein synthesis within the mitochondrion. MRP-L12 is enhanced in growth-stimulated cells as a result of transcriptional activation, suggesting that it may function as a translational regulator of mitochondrial mRNAs. Impairment of MRP-L12 leads to reduction in cell growth rate, decreased mitochondrial ATP production and abolition of mitochondrial oxidative phosphorylation. MRP-L12 is cleaved during its translocation across the mitochondrial membrane and it exists as dimers that bind the large ribosomal subunit. MRP-L12 is 198 amino acids in length, belongs to the ribosomal protein L12P family and is highly expressed in the colon.

REFERENCES

1. Marty, L. and Fort, P. 1996. A delayed-early response nuclear gene encoding MRP-L12, the mitochondrial homologue to the bacterial translational regulator L7/L12 protein. J. Biol. Chem. 271: 11468-11476.
2. Marty, L., Taviaux, S. and Fort, P. 1997. Expression and human chromosomal localization to 17q25 of the growth-regulated gene encoding the mitochondrial ribosomal protein MRPL12. Genomics 41: 453-457.
3. Johnson, D.F., Hamon, M. and Fischel-Ghodsian, N. 1998. Characterization of the human mitochondrial ribosomal S12 gene. Genomics 52: 363-368.
4. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602375. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Frei, C., Galloni, M., Hafen, E. and Edgar, B.A. 2005. The *Drosophila* mitochondrial ribosomal protein MRP-L12 is required for Cyclin D/Cdk4-driven growth. EMBO J. 24: 623-634.

CHROMOSOMAL LOCATION

Genetic locus: MRPL12 (human) mapping to 17q25.3.

PRODUCT

MRP-L12 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MRP-L12 shRNA Plasmid (h): sc-93743-SH and MRP-L12 shRNA (h) Lentiviral Particles: sc-93743-V as alternate gene silencing products.

For independent verification of MRP-L12 (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-93743A and sc-93743B.

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.

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

MRP-L12 siRNA (h) is recommended for the inhibition of MRP-L12 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.

GENE EXPRESSION MONITORING

MRP-L12 (397.1): sc-100839 is recommended as a control antibody for monitoring of MRP-L12 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 MRP-L12 gene expression knockdown using RT-PCR Primer: MRP-L12 (h)-PR: sc-93743-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.