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SANTA CRUZ BIOTECHNOLOGY, INC.

MRP-S27 siRNA (m): sc-149627

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-S27 (mitochondrial ribosomal protein S27), also known as S27mt, is a 414 amino acid component of the mitochondrial ribosome small subunit (28S) that localizes to mitochondria and contains two PPR (pentatricopeptide) repeats. Widely expressed, MRP-S27 is found at highest levels in skeletal muscle and heart, and is encoded by a gene located on 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

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2. Cavdar Koc, E., et al. 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. Koc, E.C., et al. 2001. Identification of four proteins from the small subunit of the mammalian mitochondrial ribosome using a proteomics approach. Protein Sci. 10: 471-481.
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.
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6. Sazawal, S., et al. 2009. Haematological & molecular profile of acute myelogenous leukaemia in India. Indian J. Med. Res. 129: 256-261.
7. Wang, J.C. and Khan, A. 2010. Large distal 5p deletion with hemifacial microsomia and absence of Cri du chat syndrome. Clin. Dysmorphol. 19: 38-39.

CHROMOSOMAL LOCATION

Genetic locus: Mrps27 (mouse) mapping to 13 D1.

PRODUCT

MRP-S27 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MRP-S27 shRNA Plasmid (m): sc-149627-SH and MRP-S27 shRNA (m) Lentiviral Particles: sc-149627-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 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-S27 siRNA (m) is recommended for the inhibition of MRP-S27 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 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-S27 (A-10): sc-390396 is recommended as a control antibody for monitoring of MRP-S27 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-S27 gene expression knockdown using RT-PCR Primer: MRP-S27 (m)-PR: sc-149627-PR (20 µl). 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.