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SANTA CRUZ BIOTECHNOLOGY, INC.

MTMR14 siRNA (m): sc-149687

BACKGROUND

Myotubularin and the myotubularin-related proteins (MTMR1-9) belong to a highly conserved family of eukaryotic phosphatases that utilize inositol phospholipids, rather than phosphoproteins, as substrates. MTMR14 (myotubularin related protein 14), also known as HJUMPY, hEDTP or C3orf29, is a 650 amino acid protein that localizes to the cytoplasm and belongs to the protein-tyrosine phosphatase family. Expressed in a variety of tissues, including placenta, heart, skeletal muscle, kidney, lung, liver and pancreas, MTMR14 functions as a lipid phosphatase that specifically dephosphorylates phosphatidylinositol 3-phosphate (PtdIns3P) and PtdIns(3,5)P2 and is inactive toward other phosphatidylinositol 3-phosphate moieties. Defects in the gene encoding MTMR14 are associated with centronuclear myopathy autosomal dominant (ADCNM), an autosomal dominant congenital muscle disorder that is characterized by progressive muscular weakness and wasting. Multiple isoforms of MTMR14 exist due to alternative splicing events.

REFERENCES

1. Nandurkar, H.H. and Huysmans, R. 2002. The myotubularin family: novel phosphoinositide regulators. IUBMB Life 53: 37-43.
2. Schaletzky, J., et al. 2003. Phosphatidylinositol-5-phosphate activation and conserved substrate specificity of the myotubularin phosphatidylinositol 3-phosphatases. Curr. Biol. 13: 504-509.
3. Alonso, A., et al. 2004. Protein tyrosine phosphatases in the human genome. Cell 117: 699-711.
4. Jeannet, P.Y., et al. 2004. Clinical and histologic findings in autosomal centronuclear myopathy. Neurology 62: 1484-1490.
5. Tosch, V., et al. 2006. A novel PtdIns3P and PtdIns(3,5)P2 phosphatase with an inactivating variant in centronuclear myopathy. Hum. Mol. Genet. 15: 3098-3106.
6. Lee, J.Y., et al. 2007. Autosomal dominant centronuclear myopathy with unique clinical presentations. J. Korean Med. Sci. 22: 1098-1101.

CHROMOSOMAL LOCATION

Genetic locus: Mtmr14 (mouse) mapping to 6 E3.

PRODUCT

MTMR14 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suit-able for 50-100 transfections. Also see MTMR14 shRNA Plasmid (m): sc-149687-SH and MTMR14 shRNA (m) Lentiviral Particles: sc-149687-V as alternate gene silencing products.

For independent verification of MTMR14 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3 nmol of lyophilized siRNA. These include: sc-149687A, sc-149687B and sc-149687C.

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

MTMR14 siRNA (m) is recommended for the inhibition of MTMR14 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MTMR14 gene expression knockdown using RT-PCR Primer: MTMR14 (m)-PR: sc-149687-PR (20 µl, 455 bp). 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.