SANTA CRUZ BIOTECHNOLOGY, INC.

MYH3 siRNA (h): sc-93798

BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells. Actin filaments can form both stable and labile structures, and are crucial components of microvilli and the contractile apparatus of muscle cells. Myosin is a hexamer of two heavy chains (MHC) and four light chains (MLC) that interact with Actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. MYH3 (Myosin heavy chain 3), also known as muscle embryonic Myosin heavy chain or SMHCE, is a 1,940 amino acid that localizes to the thick filaments of myofibrils. While highly expressed in fetal skeletal muscle, MYH3 is barely detectable in adult skeletal muscle. Defects in the gene encoding MYH3, which maps to human chromosome 17p13.1, are the cause of distal arthrogryposis type 2B (DA2B).

REFERENCES

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3. Jullian, E.H., et al. 1995. Characterization of a human perinatal myosin heavy-chain transcript. Eur. J. Biochem. 230: 1001-1006.
4. Bober, E., et al. 1990. Identification of three developmentally controlled isoforms of human myosin heavy chains. Eur. J. Biochem. 189: 55-65.
5. Cheney, R.E., et al. 1993. Phylogenetic analysis of the myosin superfamily. Cell Motil. Cytoskeleton 24: 215-223.
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7. Owens, G.K. 1995. Regulation of differentiation of vascular smooth muscle cells. Physiol. Rev. 75: 487-517.
8. Weiss, A., et al. 1996. The mammalian myosin heavy chain gene family. Annu. Rev. Cell Dev. Biol. 12: 417-439.
9. Toydemir, R.M., et al. 2006. Mutations in embryonic myosin heavy chain (MYH3) cause Freeman-Sheldon syndrome and Sheldon-Hall syndrome. Nat. Genet. 38: 561-565.

CHROMOSOMAL LOCATION

Genetic locus: MYH3 (human) mapping to 17p13.1.

PRODUCT

MYH3 siRNA (h) 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 MYH3 shRNA Plasmid (h): sc-93798-SH and MYH3 shRNA (h) Lentiviral Particles: sc-93798-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

MYH3 siRNA (h) is recommended for the inhibition of MYH3 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

MYH3 (F1.652): sc-53091 is recommended as a control antibody for monitoring of MYH3 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 MYH3 gene expression knockdown using RT-PCR Primer: MYH3 (h)-PR: sc-93798-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.