SANTA CRUZ BIOTECHNOLOGY, INC.

MYH4 siRNA (h): sc-106274

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. Myosin heavy chains, encoded by the MYH gene family, contain Actin-activated ATPase activity that generate the motor function of myosin. Myosin heavy chains were initially isolated from human fetal skeletal muscle and are the major determinant in the contraction speed of skeletal muscle. MYH4 (myosin heavy chain 4), also known as myosin heavy chain 2b, is a 1,939 amino acid protein that localizes to the thick filaments of myofibrils and is encoded by a gene that maps to human chromosome 17p13.1. MYH4 contains one IQ domain and one myosin head-like domain.

REFERENCES

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2. Cheney, R.E., Riley, M.A. and Mooseker, M.S. 1993. Phylogenetic analysis of the myosin superfamily. Cell Motil. Cytoskeleton 24: 215-223.
3. Hughes, S.M., Cho, M., Karsch-Mizrachi, I., Travis, M., Silberstein, L., Leinwand, L.A. and Blau, H.M. 1993. Three slow myosin heavy chains sequentially expressed in developing mammalian skeletal muscle. Dev. Biol. 158: 183-199.
4. Soussi-Yanicostas, N., Whalen, R.G. and Petit, C. 1993. Five skeletal myosin heavy chain genes are organized as a multigene complex in the human genome. Hum. Mol. Genet. 2: 563-569.
5. Weiss, A. and Leinwand, L.A. 1996. The mammalian myosin heavy chain gene family. Annu. Rev. Cell Dev. Biol. 12: 417-439.
6. Weiss, A., Schiaffino, S. and Leinwand, L.A. 1999. Comparative sequence analysis of the complete human sarcomeric myosin heavy chain family: implications for functional diversity. J. Mol. Biol. 290: 61-75.
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CHROMOSOMAL LOCATION

Genetic locus: MYH4 (human) mapping to 17p13.1.

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.

PRODUCT

MYH4 siRNA (h) is a pool of 3 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 MYH4 shRNA Plasmid (h): sc-106274-SH and MYH4 shRNA (h) Lentiviral Particles: sc-106274-V as alternate gene silencing products.

For independent verification of MYH4 (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-106274A, sc-106274B and sc-106274C.

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

MYH4 siRNA (h) is recommended for the inhibition of MYH4 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MYH4 gene expression knockdown using RT-PCR Primer: MYH4 (h)-PR: sc-106274-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.