SANTA CRUZ BIOTECHNOLOGY, INC.

MYH7 siRNA (h): sc-106222

BACKGROUND

Myosin heavy chains are ubiquitous Actin-based motor proteins that convert the chemical energy derived from ATP hydrolysis into the mechanical energy that drives diverse motile processes in eukaryotic cells, including cytokinesis, vesicular transport and cellular locomotion. Muscle myosin is a heterohexamer consisting of two myosin heavy chains and two associated nonidentical pairs of myosin light chains. The seven myosin heavy chain isoforms that predominate in mammalian skeletal muscles include two developmental isoforms, MHC-embryonic (MYH3) and MHC-perinatal (MYH8); three adult skeletal muscle isoforms, MHC IIa (MYH2), MHC IIb (MYH4) and MHC IIx/d (MYH1); and MHC-β/slow (MYH7 or MHC-β), which is also expressed in cardiac muscle. Research indicates that mutations of the MYH7 gene causes hypertrophic cardiomyopathy.

REFERENCES

1. Leinwand, L.A., et al. 1983. Multigene family for sarcomeric Myosin heavy chain in mouse and human DNA: localization on a single chromosome. Science 221: 766-769.
2. Leinwand, L.A., et al. 1983. Isolation and characterization of human Myosin heavy chain genes. Proc. Natl. Acad. Sci. USA 80: 3716-3720.
3. Edwards, Y.H., et al. 1986. Human Myosin heavy chain genes assigned to chromosome 17 using a human cDNA clone as probe. Ann. Hum. Genet. 49: 101-109.
4. Jandreski, M.A., et al. 1987. Two different forms of β Myosin heavy chain are expressed in human striated muscle. Hum. Genet. 77: 127-31.
5. Soussi-Yanicostas, N., et al. 1993. Five skeletal Myosin heavy chain genes are organized as a multigene complex in the human genome. Hum. Mol. Genet. 2: 563-569.
6. Soussi-Yanicostas, N., et al. 1993. Five skeletal Myosin heavy chain genes are organized as a multigene complex in the human genome. Hum. Mol. Genet. 2: 563-569.
7. Smerdu, V., et al. 1995. Type IIx Myosin heavy chain transcripts are expressed in type IIβ fibers of human skeletal muscle. Am. J. Physiol. 267: C1723-C1728.

CHROMOSOMAL LOCATION

Genetic locus: MYH7 (human) mapping to 14q11.2.

PRODUCT

MYH7 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 MYH7 shRNA Plasmid (h): sc-106222-SH and MYH7 shRNA (h) Lentiviral Particles: sc-106222-V as alternate gene silencing products.

For independent verification of MYH7 (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-106222A, sc-106222B and sc-106222C.

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

MYH7 siRNA (h) is recommended for the inhibition of MYH7 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

MYH7 (A4.840): sc-53089 is recommended as a control antibody for monitoring of MYH7 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 MYH7 gene expression knockdown using RT-PCR Primer: MYH7 (h)-PR: sc-106222-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.