SANTA CRUZ BIOTECHNOLOGY, INC.

MYH10 siRNA (m): sc-61123

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 (abbreviated as MYH or MHC) and four light chains (MLC) that interacts with Actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. MYH10 is also designated Myosin IIb, Myosin-10, NMMHC-IIB, nonmuscle myosin heavy chain IIb or cellular myosin heavy chain, type B. MYH10 is involved in cell shape, cytokinesis and specialized functions such as capping and secretion. It is expressed in leukoctyes and in glomeruli in the kidney.

REFERENCES

1. Simons, M., et al. 1991. Human nonmuscle Myosin heavy chains are encoded by two genes located on different chromosomes. Circ. Res. 69: 530-539.
2. Aikawa, M., et al. 1993. Human smooth muscle Myosin heavy chain isoforms as molecular markers for vascular development and atherosclerosis. Circ. Res. 73: 1000-1012.
3. Phillips, C.L., et al. 1995. Cloning of the cDNA encoding human nonmuscle Myosin heavy chain B and analysis of human tissues with isoform-specific antibodies. J. Muscle Res. Cell Motil. 16: 379-389.
4. Ramamurthy, B., et al. 2004. Kinetic mechanism of blebbistatin inhibition of nonmuscle Myosin IIb. Biochemistry 43: 14832-14839.
5. Meshel, A.S., et al. 2005. Basic mechanism of three-dimensional collagen fibre transport by fibroblasts. Nat. Cell Biol. 7: 157-164.
6. Nakasawa, T., et al. 2005. Critical regions for assembly of vertebrate nonmuscle Myosin II. Biochemistry 44: 174-183.

CHROMOSOMAL LOCATION

Genetic locus: Myh10 (mouse) mapping to 11 B3.

PRODUCT

MYH10 siRNA (m) 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 MYH10 shRNA Plasmid (m): sc-61123-SH and MYH10 shRNA (m) Lentiviral Particles: sc-61123-V as alternate gene silencing products.

For independent verification of MYH10 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61123A, sc-61123B and sc-61123C.

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

MYH10 siRNA (m) is recommended for the inhibition of MYH10 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

MYH10 (A-3): sc-376942 is recommended as a control antibody for monitoring of MYH10 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 MYH10 gene expression knockdown using RT-PCR Primer: MYH10 (m)-PR: sc-61123-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hayashida, M., et al. 2015. Neural activity selects myosin IIB and VI with a specific time window in distinct dynamin isoform-mediated synaptic vesicle reuse pathways. J. Neurosci. 35: 8901-8913.

RESEARCH USE

For research use only, not for use in diagnostic procedures.