

Myosin X siRNA (m): sc-43242

BACKGROUND

Myosins are molecular motors that move along filamentous Actin and influence cellular movements such as phagocytosis. There are seven classes of Myosins in vertebrates, including Myosin II and six unconventional Myosin classes: I, V, VI, VII, IX and X. Myosin X (Myo10 or M10) contains three IQ motifs, a Myosin tail homology 4 (MyTH4) domain, a FERM (band 4.1/Ezrin/Radixin/Moesin) domain, three Pleckstrin homology domains (which mediate phosphatidylinositol phospholipid signaling) and three PEST sites (which may allow cleavage of the Myosin tail). Myosin X binds F-Actin in an ATP-sensitive manner and can influence normal phagocytosis through PI-3 kinase-dependent pathways. Myosin X in cultured cells localizes to the edges of lamellipodia, membrane ruffles and the tips of filopodial Actin bundles. The human Myosin X gene maps to chromosome 5p15.1 and encodes a 2,058 amino acid protein.

REFERENCES

1. Hasson, T., et al. 1996. Mapping of unconventional myosins in mouse and human. *Genomics* 36: 431-439.
2. Berg, J.S., et al. 2000. Myosin-X, a novel Myosin with pleckstrin homology domains, associates with regions of dynamic Actin. *J. Cell Sci.* 113: 3439-3451.
3. Homma, K., et al. 2001. Motor function and regulation of Myosin X. *J. Biol. Chem.* 276: 34348-34354.
4. Chavrier, P. 2002. May the force be with you: Myosin-X in phagocytosis. *Nat. Cell Biol.* 4: E169-E171.

CHROMOSOMAL LOCATION

Genetic locus: Myo10 (mouse) mapping to 15 B1.

PRODUCT

Myosin X 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Myosin X shRNA Plasmid (m): sc-43242-SH and Myosin X shRNA (m) Lentiviral Particles: sc-43242-V as alternate gene silencing products.

For independent verification of Myosin X (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-43242A, sc-43242B and sc-43242C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Myosin X siRNA (m) is recommended for the inhibition of Myosin X 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 μ M in 66 μ l. 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

Myosin X (C-1): sc-166720 is recommended as a control antibody for monitoring of Myosin X 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Myosin X gene expression knockdown using RT-PCR Primer: Myosin X (m)-PR: sc-43242-PR (20 μ l, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Plantman, S., et al. 2013. Neuronal Myosin X is upregulated after peripheral nerve injury and mediates laminin-induced growth of neurites. *Mol. Cell. Neurosci.* 56: 96-101.

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.