

Myosin XVIIIIB siRNA (h): sc-61119

BACKGROUND

Myosin XVIIIIB (MYO18B) is a 2,567 amino acid, unconventional myosin heavy chain that is expressed mainly in human cardiac and skeletal muscles and, at much lower levels, in the testis. Myosin XVIIIIB is located in the cytoplasm of undifferentiated myoblast cells and has an N-terminal head domain functioning as a motor (with an ATP-binding site as well as an Actin-binding region), a neck region containing an IQ motif, and a C-terminal tail with a short coiled-coil domain allowing for dimerization to form a 2-headed structure. Sug1, a regulator of the 26S proteasome, binds to the C-terminal tail of Myosin XVIIIIB. This Sug1 binding causes an upregulation of Myosin XVIIIIB. Myosin XVIIIIB is frequently deleted, mutated and/or hypermethylated in lung and ovarian cancers, suggesting its candidacy as a tumor-suppressor. Furthermore, the Histones H3 and H4 play a role in the regulation of Myosin XVIIIIB expression, so histone deacetylation surrounding the promoter region may be involved in lung and ovarian carcinomas.

REFERENCES

1. Nishioka, M., et al. 2002. MYO18B, a candidate tumor suppressor gene at chromosome 22q12.1, deleted, mutated, and methylated in human lung cancer. *Proc. Natl. Acad. Sci. USA* 99: 12269-12274.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607295. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Salamon, M., et al. 2003. Human MYO18B, a novel unconventional myosin heavy chain expressed in striated muscles moves into the myonuclei upon differentiation. *J. Mol. Biol.* 326: 137-149.
4. Yokota, J., et al. 2003. Genetic alterations responsible for metastatic phenotypes of lung cancer cells. *Clin. Exp. Metastasis* 20: 189-193.
5. Tani, M., et al. 2004. Correlation between histone acetylation and expression of the MYO18B gene in human lung cancer cells. *Genes Chromosomes Cancer* 40: 146-151.
6. Yanaiharu, N., et al. 2004. Reduced expression of MYO18B, a candidate tumor-suppressor gene on chromosome arm 22q, in ovarian cancer. *Int. J. Cancer* 112: 150-154.

CHROMOSOMAL LOCATION

Genetic locus: MYO18B (human) mapping to 22q12.1.

PRODUCT

Myosin XVIIIIB 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Myosin XVIIIIB shRNA Plasmid (h): sc-61119-SH and Myosin XVIIIIB shRNA (h) Lentiviral Particles: sc-61119-V as alternate gene silencing products.

For independent verification of Myosin XVIIIIB (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-61119A, sc-61119B and sc-61119C.

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 XVIIIIB siRNA (h) is recommended for the inhibition of Myosin XVIIIIB 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 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 XVIIIIB (D-11): sc-515011 is recommended as a control antibody for monitoring of Myosin XVIIIIB 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 XVIIIIB gene expression knockdown using RT-PCR Primer: Myosin XVIIIIB (h)-PR: sc-61119-PR (20 μ l). 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.