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SANTA CRUZ BIOTECHNOLOGY, INC.

Myosin XVIIIB siRNA (m): sc-149765

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin XVIIIB (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 XVIIIB 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 XVIIIB. This Sug1 binding causes an upregulation of Myosin XVIIIB. Myosin XVIIIB 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 XVIIIB expression, so histone deacetylation surrounding the promoter region may be involved in lung and ovarian carcinomas.

REFERENCES

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2. 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.
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. Yanaihara, 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 (mouse) mapping to 5 F.

PRODUCT

Myosin XVIIIB 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 Myosin XVIIIB shRNA Plasmid (m): sc-149765-SH and Myosin XVIIIB shRNA (m) Lentiviral Particles: sc-149765-V as alternate gene silencing products.

For independent verification of Myosin XVIIIB (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-149765A, sc-149765B and sc-149765C.

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

Myosin XVIIIB siRNA (m) is recommended for the inhibition of Myosin XVIIIB 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

Myosin XVIIIB (D-11): sc-515011 is recommended as a control antibody for monitoring of Myosin XVIIIB 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 Myosin XVIIIB gene expression knockdown using RT-PCR Primer: Myosin XVIIIB (m)-PR: sc-149765-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.