SANTA CRUZ BIOTECHNOLOGY, INC.

MYL6B siRNA (h): sc-95969

BACKGROUND

MYL6B (Myosin light chain 6B) is a heavy chain regulator found in smooth muscle and non-muscle Myosin complexes. Three general classes of Myosin have been cloned: smooth muscle myosins, striated muscle myosins and non-muscle myosins. Contractile activity in smooth muscle is regulated by the calcium/calmodulin-dependent phosphorylation of myosin light chain by Myosin light chain kinase. Myosin heavy chains are encoded by the MYH gene family and have Actin-activated ATPase activity which generates the motor function of Myosin. Although it contains three of the EF-hand domains common to Actin and other Myosin regulating proteins, MYL6B does not bind calcium during contraction. It is primarily found in a hexamer consisting of four light chains and two heavy chains. It most commonly interacts with Myosin Va, an Actin based motor that can move in large steps. MYL6B is expressed in most tissues with neurons and smooth muscle tissue having the highest expression.

REFERENCES

1. Kumon, A. and Villar-Palasi, C. 1979. Purification and properties of Troponin T kinase from rabbit skeletal muscle. Biochim. Biophys. Acta 566: 305-320.
2. Payne, M.E., et al. 1983. Purification and characterization of rabbit liver calmodulin-dependent glycogen synthase kinase. J. Biol. Chem. 258: 2376-2382.
3. Tawata, M., et al. 1983. Partial purification and characterization of Myosin light chain kinase from bovine thyroid gland. Endocrinology 112: 701-706.
4. Wakusawa, S., et al. 1992. Increase of vinblastine accumulation by inhibitors of calmodulin-dependent cell functions in rat ascites hepatoma AH66 cells. Anticancer Res. 12: 2021-2024.
5. Mitsui, T., et al. 1992. Purification and characterization of smooth muscle Myosin-associated phosphatase from chicken gizzards. J. Biol. Chem. 267: 16727-16735.
6. Thorsteinsdóttir, S., et al. 1999. Expression of the a 6A integrin splice variant in developing mouse embryonic stem cell aggregates and correlation with cardiac muscle differentiation. Differentiation 64: 173-184.

CHROMOSOMAL LOCATION

Genetic locus: MYL6B (human) mapping to 12q13.2.

PRODUCT

MYL6B siRNA (h) is a pool of 2 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 MYL6B shRNA Plasmid (h): sc-95969-SH and MYL6B shRNA (h) Lentiviral Particles: sc-95969-V as alternate gene silencing products.

For independent verification of MYL6B (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-95969A and sc-95969B.

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

MYL6B siRNA (h) is recommended for the inhibition of MYL6B 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

MYL6B (YY-06): sc-100951 is recommended as a control antibody for monitoring of MYL6B 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 MYL6B gene expression knockdown using RT-PCR Primer: MYL6B (h)-PR: sc-95969-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.