SANTA CRUZ BIOTECHNOLOGY, INC.

Myosin Va siRNA (h): sc-35995

BACKGROUND

Myosin Va, a member of the unconventional Myosin family, is a non-muscle Myosin that structurally combines elements from both nonmuscle Myosin type I and nonmuscle Myosin type II. Class V unconventional Myosins, which include Myosin Va and Myosin Vb, are nonfilamentous, Actin-binding enzymes that appear to be expressed ubiquitously. Myosin V proteins are regulated by their heavy chain phosphorylation, which occurs in the carboxy-terminal tail domain. The mouse Myosin Va gene is also known as the mouse dilute gene because mutations in this gene cause the coat color in mice to lighten. Mutations in the Myosin Va gene also result in the onset of severe neurological defects shortly after birth. Defects in the human Myosin Va gene, which maps to chromosome 15q21.2, have been implicated in Griscelli disease, a rare autosomal recessive disorder characterized by pigmentary dilution, variable cellular immunodeficiency and onset of acute, uncontrolled lymphocyte and macrophage activation.

REFERENCES

1. Engle, L.J., et al. 1994. Cloning, analysis, and chromosomal localization of myoxin (MYH12), the human homologue to the mouse dilute gene. Genomics 19: 407-416.
2. Pastural, E., et al. 1997. Griscelli disease maps to chromosome 15q21 and is associated with mutations in the Myosin Va gene. Nat. Genet. 16: 289-292.
3. Wu, X., et al. 1998. Myosin Va associates with microtubule-rich domains in both interphase and dividing cells. Cell Motil. Cytoskeleton 40: 286-303.
4. Redowicz, M.J. 2001. Regulation of nonmuscle Myosins by heavy chain phosphorylation. J. Muscle Res. Cell Motil. 22: 163-173.

CHROMOSOMAL LOCATION

Genetic locus: MYO5A (human) mapping to 15q21.2.

PRODUCT

Myosin Va 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Myosin Va shRNA Plasmid (h): sc-35995-SH and Myosin Va shRNA (h) Lentiviral Particles: sc-35995-V as alternate gene silencing products.

For independent verification of Myosin Va (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-35995A, sc-35995B and sc-35995C.

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 Va siRNA (h) is recommended for the inhibition of Myosin Va 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.

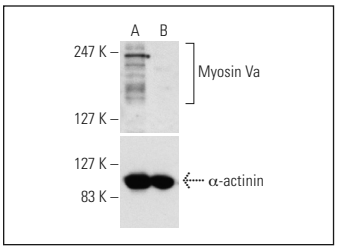
GENE EXPRESSION MONITORING

Myosin Va (G-4): sc-365986 is recommended as a control antibody for monitoring of Myosin Va 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Myosin Va gene expression knockdown using RT-PCR Primer: Myosin Va (h)-PR: sc-35995-PR (20 µl, 440 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Myosin Va siRNA (h): sc-35995. Western blot analysis of Myosin Va expression in non-transfected control (**A**) and Myosin Va siRNA transfected (**B**) HeLa cells. Blot probed with Myosin Va (N-20): sc-17706. α-actinin (H-2): sc-17829 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Braganza, A., et al. 2019. Myoglobin induces mitochondrial fusion, thereby inhibiting breast cancer cell proliferation. J. Biol. Chem. 294: 7269-7282.
2. Moore, A.S., et al. 2021. Actin cables and comet tails organize mitochondrial networks in mitosis. Nature 591: 659-664.

RESEARCH USE

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