SANTA CRUZ BIOTECHNOLOGY, INC.

Myosin IXb siRNA (h): sc-61124

BACKGROUND

Myosin IXb, also designated Myosin 9B, MYO9B, CELIAC4 and MYR5, is a single-headed myosin that moves processively on Actin filaments in the minus-end direction, making it the first myosin superfamily member identified that travels in the reverse direction. Isolated cDNAs of human Myosin IXB from liver and small intestine libraries encode a 2,022 amino acid protein that maps to chromosome 19p13.11. Studies indicate that Myosin IXb binds calmodulin through IQ motifs situated in its neck domain and, like other CALM1-containing myosins, exhibits maximal velocity of Actin filaments in the absence of calcium, contains putative calmodulin light chains and is a calcium-regulated, mechanochemically active motor that demonstrates Rho GAP activity. Research has shown a significant and replicable association of celiac disease to a common irregularity located in intron 28 of the myosin IXBgene, which encodes an atypical myosin molecule that functions in the remodeling of Actin in epithelial enterocytes. Individuals homozygous with respect to the at-risk allele have a 2.3-times higher risk of celiac disease.

REFERENCES

1. Bähler, M., et al. 1997. Physical myosin MYR5, to chromosome 19p13.1. Genomics 43: 107-109.
2. Post, P.L., et al. 1998. Human Myosin IXb is a mechanochemically active motor and a GAP for Rho. J. Cell Sci. 111: 941-950.
3. Inoue, A., et al. 2002. Myosin IXb is a single-headed minus-end-directed processive motor. Nat. Cell Biol. 4: 302-306.
4. Post, P.L., et al. 2002. Myosin IXb is a single-headed and processive motor. J. Biol. Chem. 277: 11679-11683.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602129. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. O'Connell, C.B., et al. 2003. Native Myosin IXb is a plus-, not a minus-end-directed motor. Nat. Cell Biol. 5: 171-172.
7. Monsuur, A.J., et al. 2005. Myosin IXb variant increases the risk of celiac disease and points toward a primary intestinal barrier defect. Nat. Genet. 37: 1341-1344.
8. Saeki, N., et al. 2005. BIG1 is a binding partner of Myosin IXb and regulates its Rho-GTPase activating protein activity. J. Biol. Chem. 280: 10128-10134.
9. Nalavadi, V., et al. 2005. Kinetic mechanism of Myosin IXb and the contributions of two class IX-regions. J. Biol. Chem. 280: 38957-38968.

CHROMOSOMAL LOCATION

Genetic locus: MYO9B (human) mapping to 19p13.11.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

Myosin IXb 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 IXb shRNA Plasmid (h): sc-61124-SH and Myosin IXb shRNA (h) Lentiviral Particles: sc-61124-V as alternate gene silencing products.

For independent verification of Myosin IXb (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-61124A, sc-61124B and sc-61124C.

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Myosin IXb gene expression knockdown using RT-PCR Primer: Myosin IXb (h)-PR: sc-61124-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.