SANTA CRUZ BIOTECHNOLOGY, INC.

myopalladin siRNA (h): sc-75851

BACKGROUND

Myopalladin, also known as MYPN or MYOP, is a 1,320 amino acid protein that localizes to both the cytoplasm and the nucleus and is a member of the myotilin/palladin family. Expressed in fetal heart and adult skeletal muscle, myopalladin acts as a structural component of the sarcomere that tethers both skeletal and cardiac muscle to α-actinin. Myopalladin contains five Ig (immunoglobulin)-like domains and is bound to the sarcomere in the central I-band region and at the Z-line periphery. Overexpression of myopalladin is thought to disrupt proper sarcomeric function, indicating that proper myopalladin levels are essential for sarcomeric integrity. Defects in the gene encoding myopalladin are associated with idiopathic dilated cardiomyopathy (DCM), a disease characterized by an enlarged heart that does not function properly. Three isoforms of myopalladin exist due to alternative splicing events.

REFERENCES

1. Bang, M.L., et al. 2001. Myopalladin, a novel 145-kilodalton sarcomeric protein with multiple roles in Z-disc and I-band protein assemblies. J. Cell Biol. 153: 413-427.
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3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608517. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Miller, M.K., et al. 2003. The muscle ankyrin repeat proteins: CARP, ankrd2/Arpp and DARP as a family of titin filament-based stress response molecules. J. Mol. Biol. 333: 951-964.
5. Otey, C.A., et al. 2005. The palladin/myotilin/myopalladin family of Actin-associated scaffolds. Int. Rev. Cytol. 246: 31-58.
6. Wimmers, K., et al. 2007. Associations of functional candidate genes derived from gene-expression profiles of prenatal porcine muscle tissue with meat quality and muscle deposition. Anim. Genet. 38: 474-484.
7. Duboscq-Bidot, L., et al. 2008. Mutations in the Z-band protein myopalladin gene and idiopathic dilated cardiomyopathy. Cardiovasc. Res. 77: 118-125.

CHROMOSOMAL LOCATION

Genetic locus: MYPN (human) mapping to 10q21.3.

PRODUCT

myopalladin 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 myopalladin shRNA Plasmid (h): sc-75851-SH and myopalladin shRNA (h) Lentiviral Particles: sc-75851-V as alternate gene silencing products.

For independent verification of myopalladin (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-75851A, sc-75851B and sc-75851C.

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

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

myopalladin (72-J): sc-81810 is recommended as a control antibody for monitoring of myopalladin 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 myopalladin gene expression knockdown using RT-PCR Primer: myopalladin (h)-PR: sc-75851-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.