SANTA CRUZ BIOTECHNOLOGY, INC.

Myozenin 1 siRNA (h): sc-90433

BACKGROUND

Myozenins, including Myozenin 1 (also known as MYOZ1, Calsarcin-2, or FATZ), Myozenin 2 and Myozenin 3, are a family of intracellular binding proteins that are involved in linking Z-disk proteins to the sarcomere. Expressed at high levels in cardiac and skeletal muscle and at lower levels in prostate, pancreas and heart, Myozenin 1 is a 299 amino acid nuclear protein that interacts with the Z-disk proteins, α-actinin, Filamin 2 and PP2B (calcineurin), and effectively forms a bridge between these proteins and muscle fibers. Via these interactions, Myozenin 1 couples striated muscle activity to protein activation and is thought to play a role in both Z-disk assembly and myofibrillogenesis. Due to the close involvement of Myozenin 1 with muscle formation, mutations in the gene encoding Myozenin 1 may be associated with muscular dystrophies and neuromuscular myopathies.

REFERENCES

1. Faulkner, G., et al. 2000. FATZ, a filamin-, actinin-, and telethonin-binding protein of the Z-disc of skeletal muscle. J. Biol. Chem. 275: 41234-41242.
2. Frey, N., et al. 2000. Calsarcins, a novel family of sarcomeric calcineurin-binding proteins. Proc. Natl. Acad. Sci. USA 97: 14632-14637.
3. Takada, F., et al. 2001. Myozenin: an α-actinin- and γ-filamin-binding protein of skeletal muscle Z lines. Proc. Natl. Acad. Sci. USA 98: 1595-1600.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605603. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Gontier, Y., et al. 2005. The Z-disc proteins myotilin and FATZ-1 interact with each other and are connected to the sarcolemma via muscle-specific filamins. J. Cell Sci. 118: 3739-3749.
6. Arola, A.M., et al. 2007. Mutations in PDLIM3 and MYOZ1 encoding myocyte Z line proteins are infrequently found in idiopathic dilated cardiomyopathy. Mol. Genet. Metab. 90: 435-440.
7. Posch, M.G., et al. 2007. Mutations in MYOZ1 as well as MYOZ2 encoding the calsarcins are not associated with idiopathic and familial dilated cardiomyopathy. Mol. Genet. Metab. 91: 207-208.

CHROMOSOMAL LOCATION

Genetic locus: MYOZ1 (human) mapping to 10q22.2.

PRODUCT

Myozenin 1 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 Myozenin 1 shRNA Plasmid (h): sc-90433-SH and Myozenin 1 shRNA (h) Lentiviral Particles: sc-90433-V as alternate gene silencing products.

For independent verification of Myozenin 1 (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-90433A, sc-90433B and sc-90433C.

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

Myozenin 1 siRNA (h) is recommended for the inhibition of Myozenin 1 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

Myozenin 1 (8): sc-136429 is recommended as a control antibody for monitoring of Myozenin 1 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 Myozenin 1 gene expression knockdown using RT-PCR Primer: Myozenin 1 (h)-PR: sc-90433-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.