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SANTA CRUZ BIOTECHNOLOGY, INC.

Myozenin 2 siRNA (h): sc-45710

BACKGROUND

The calcineurin-binding protein Myozenin 2, also designated Calsarcin-1, is a member of the Calsarcin protien family. Calcineurin is a calcium- and calmodulin-dependent protein phosphatase that is involved in controlling the slow fiber gene expression in skeletal muscle and hypertrophy of cardiac muscle. The Calsarcins are sarcomeric proteins that couple calcineurin and muscle activity. In cardiac and skeletal muscle cells, Myozenin 2 binds calcineurin to α-actinin at the z-line of the sarcomere. During embryogenesis, Myozenin 1 and 2 are expressed in developing muscle. The Myozenin 2 gene maps to chromosome 4q and is expressed specifically in adult cardiac and slow-twitch skeletal muscle, while Myozenin 1 is only detected in fast skeletal muscle.

REFERENCES

1. Ahmad, F., et al. 2000. Identification and characterization of a novel gene (C4orf5) located on human chromosome 4q with specific expression in cardiac and skeletal muscle. Genomics 70: 347-353.
2. Frey, N., et al. 2000. Calsarcins, a novel family of sarcomeric calcineurin-binding proteins. Proc. Natl. Acad. Sci. USA 97: 14632-14637.
3. 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.
4. 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.
5. Hayashi, T., et al. 2004. Tcap gene mutations in hypertrophic cardiomyopathy and dilated cardiomyopathy. J. Am. Coll. Cardiol. 44: 2192-2201.
6. Frey, N., et al. 2004. Mice lacking Calsarcin-1 are sensitized to calcineurin signaling and show accelerated cardiomyopathy in response to pathological biomechanical stress. Nat. Med. 10: 1336-1343.
7. Martin, L.J., et al. 2004. Major quantitative trait locus for resting heart rate maps to a region on chromosome 4. Hypertension 43: 1146-1151.

CHROMOSOMAL LOCATION

Genetic locus: MYOZ2 (human) mapping to 4q26.

PRODUCT

Myozenin 2 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 2 shRNA Plasmid (h): sc-45710-SH and Myozenin 2 shRNA (h) Lentiviral Particles: sc-45710-V as alternate gene silencing products.

For independent verification of Myozenin 2 (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-45710A, sc-45710B and sc-45710C.

PROTOCOLS

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

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 2 siRNA (h) is recommended for the inhibition of Myozenin 2 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 2 (E-11): sc-377359 is recommended as a control antibody for monitoring of Myozenin 2 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 2 gene expression knockdown using RT-PCR Primer: Myozenin 2 (h)-PR: sc-45710-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.