SANTA CRUZ BIOTECHNOLOGY, INC.

Myozenin 2 (41): sc-136461

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 4q26, 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; Myoz2 (mouse) mapping to 3 G1.

SOURCE

Myozenin 2 (41) is a mouse monoclonal antibody raised against amino acids 110-198 of Myozenin 2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

Myozenin 2 (41) is recommended for detection of Myozenin 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Myozenin 2 siRNA (h): sc-45710, Myozenin 2 siRNA (m): sc-45711, Myozenin 2 shRNA Plasmid (h): sc-45710-SH, Myozenin 2 shRNA Plasmid (m): sc-45711-SH, Myozenin 2 shRNA (h) Lentiviral Particles: sc-45710-V and Myozenin 2 shRNA (m) Lentiviral Particles: sc-45711-V.

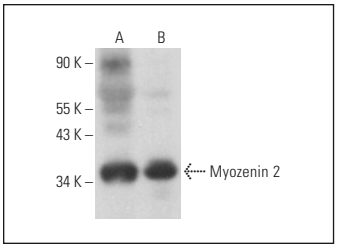
Molecular Weight of Myozenin 2: 34 kDa.

Positive Controls: human heart extract: sc-363763, rat heart extract: sc-2393 or mouse heart extract: sc-2254.

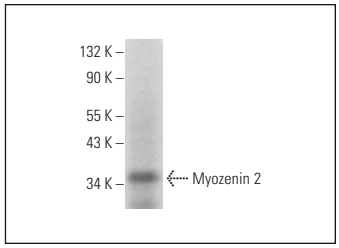
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Myozenin 2 (41): sc-136461. Western blot analysis of Myozenin 2 expression in rat heart (**A**) and human heart (**B**) tissue extracts.



Myozenin 2 (41): sc-136461. Western blot analysis of Myozenin 2 expression in mouse heart tissue extract.

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2018. Photoreceptor cell-derived CAPN5 regulates retinal pigment epithelium cell proliferation through direct regulation of SLIT2 cleavage. Invest. Ophthalmol. Vis. Sci. 59: 1810-1821.

PROTOCOLS

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