

Myozenin 2 (B-4): sc-373876

BACKGROUND

The calcineurin-binding protein Myozenin 2, also designated calsarcin-1, is a member of the calsarcin protein 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

- 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.
- Frey, N., et al. 2000. Calsarcins, a novel family of sarcomeric calcineurin-binding proteins. *Proc. Natl. Acad. Sci. USA* 97: 14632-14637.
- 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.
- 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.
- Hayashi, T., et al. 2004. Tcap gene mutations in hypertrophic cardiomyopathy and dilated cardiomyopathy. *J. Am. Coll. Cardiol.* 44: 2192-2201.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: MYOZ2 (human) mapping to 4q26; Myoz2 (mouse) mapping to 3 G1.

SOURCE

Myozenin 2 (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 227-251 near the C-terminus of Myozenin 2 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373876 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Myozenin 2 (B-4) is recommended for detection of Myozenin 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

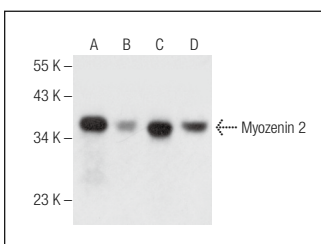
Molecular Weight of Myozenin 2: 34 kDa.

Positive Controls: mouse heart extract: sc-2254, human heart extract: sc-363763 or human skeletal muscle extract: sc-363776.

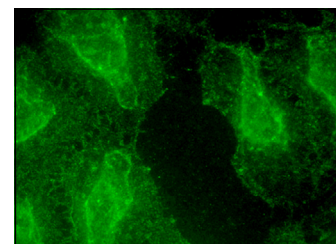
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Myozenin 2 (B-4): sc-373876. Western blot analysis of Myozenin 2 expression in mouse heart (A), rat skeletal muscle (B), human heart (C) and human skeletal muscle (D) tissue extracts.



Myozenin 2 (B-4): sc-373876. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

- Chao, C.T., et al. 2021. A combined microRNA and target protein-based panel for predicting the probability and severity of uremic vascular calcification: a translational study. *Cardiovasc. Res.* 117: 1958-1973.

RESEARCH USE

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