SANTA CRUZ BIOTECHNOLOGY, INC.

MYH7 (A4.840): sc-53089

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin heavy chains are ubiquitous Actin-based motor proteins that convert the chemical energy derived from ATP hydrolysis into the mechanical energy that drives diverse motile processes in eukaryotic cells, including cytokinesis, vesicular transport and cellular locomotion. Muscle myosin is a heterohexamer consisting of two myosin heavy chains and two associated nonidentical pairs of myosin light chains. The seven myosin heavy chain isoforms that predominate in mammalian skeletal muscles include two developmental isoforms, MHC-embryonic (MYH3) and MHC-perinatal (MYH8); three adult skeletal muscle isoforms, MHC IIa (MYH2), MHC IIb (MYH4) and MHC IIx/d (MYH1); and MHC-β/slow (MYH7 or MHC-β), which is also expressed in cardiac muscle. Research indicates that mutations of the MYH7 gene causes hypertrophic cardiomyopathy.

CHROMOSOMAL LOCATION

Genetic locus: MYH7 (human) mapping to 14q11.2; Myh7 (mouse) mapping to 14 C3.

SOURCE

MYH7 (A4.840) is a mouse monoclonal antibody raised against adult skeletal muscle myosin of human origin.

PRODUCT

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

MYH7 (A4.840) is available conjugated to agarose (sc-53089 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53089 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-53089 PE), fluorescein (sc-53089 FITC) or Alexa Fluor® 488 (sc-53089 AF488) or Alexa Fluor® 647 (sc-53089 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MYH7 (A4.840) is recommended for detection of myosin heavy chain 7 of mouse, rat, human, rabbit and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MYH7 siRNA (h): sc-106222, MYH7 siRNA (m): sc-149745, MYH7 shRNA Plasmid (h): sc-106222-SH, MYH7 shRNA Plasmid (m): sc-149745-SH, MYH7 shRNA (h) Lentiviral Particles: sc-106222-V and MYH7 shRNA (m) Lentiviral Particles: sc-149745-V.

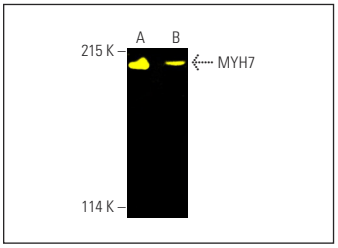
Molecular Weight of MYH7: 223 kDa.

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

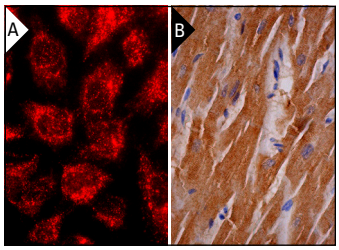
STORAGE

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

DATA



MYH7 (A4.840) Alexa Fluor® 488: sc-53089 AF488. Direct fluorescent western blot analysis of MYH7 expression in human skeletal muscle (**A**) and human heart (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214.



MYH7 (A4.840): sc-53089. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase stain-ing of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Amati, F., et al. 2011. Skeletal muscle triglycerides, diacylglycerols, and ceramides in Insulin resistance: another paradox in endurance-trained athletes? Diabetes 60: 2588-2597.
2. Gurha, P., et al. 2012. Targeted deletion of microRNA-22 promotes stress-induced cardiac dilation and contractile dysfunction. Circulation 125: 2751-2761.
3. Rouillon, J., et al. 2015. Serum proteomic profiling reveals fragments of MYOM3 as potential biomarkers for monitoring the outcome of therapeutic interventions in muscular dystrophies. Hum. Mol. Genet. 24: 4916-4932.
4. Men, X.M., et al. 2016. Association analysis of myosin heavy-chain genes mRNA transcription with the corresponding proteins expression of longissimus muscle in growing pigs. Asian-Australas J. Anim. Sci. 29: 457-463.
5. Hoa, N., et al. 2017. Estrogen receptor β maintains expression of KLF15 to prevent cardiac myocyte hypertrophy in female rodents. Mol. Cell. Endocrinol. 470: 240-250.
6. Zhao, Y., et al. 2018. An essential role for Wnt/β-catenin signaling in mediating hypertensive heart disease. Sci. Rep. 8: 8996.
7. Wen, T., et al. 2019. Transcription factor TEAD1 is essential for vascular development by promoting vascular smooth muscle differentiation. Cell Death Differ. 26: 2790-2806.
8. Yadav, S.K., et al. 2020. MMP9 mediates acute hyperglycemia-induced human cardiac stem cell death by upregulating apoptosis and pyroptosis *in vitro*. Cell Death Dis. 11: 186.
9. Ramirez-Martinez, A., et al. 2021. The nuclear envelope protein Net39 is essential for muscle nuclear integrity and chromatin organization. Nat. Commun. 12: 690.

RESEARCH USE

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