

MYH7 (A4.840): sc-71575

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.

REFERENCES

1. Leinwand, L.A., et al. 1983. Multigene family for sarcomeric myosin heavy chain in mouse and human DNA: localization on a single chromosome. *Science* 221: 766-769.
2. Leinwand, L.A., et al. 1983. Isolation and characterization of human myosin heavy chain genes. *Proc. Natl. Acad. Sci. USA* 80: 3716-3720.

CHROMOSOMAL LOCATION

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

SOURCE

MYH7 (6D592) is a mouse monoclonal antibody raised against adult skeletal muscle myosin of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

MYH7 (6D592) is recommended for detection of myosin heavy chain 7 of mouse, rat, human, rabbit and chicken origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (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.

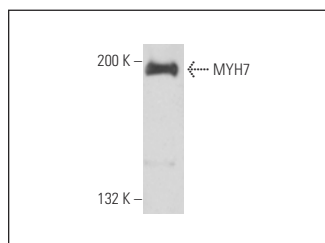
Molecular Weight of MYH7: 223 kDa.

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

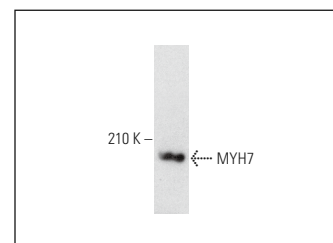
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



MYH7 (6D592): sc-71575. Western blot analysis of MYH7 expression in human skeletal muscle tissue extract.



MYH7 (6D592): sc-71575. Western blot analysis of MYH7 expression in mouse heart tissue extract.

SELECT PRODUCT CITATIONS

1. Velten, M., et al. 2011. Systemic maternal inflammation and neonatal hyperoxia induces remodeling and left ventricular dysfunction in mice. *PLoS ONE* 6: e24544.
2. Wold, L.E., et al. 2012. Cardiovascular remodeling in response to long-term exposure to fine particulate matter air pollution. *Circ. Heart Fail.* 5: 452-461.
3. Segar, J.L., et al. 2013. Thyroid hormone is required for growth adaptation to pressure load in the ovine fetal heart. *Exp. Physiol.* 98: 722-733.
4. Velten, M., et al. 2018. Perinatal inflammation induces sex-related differences in cardiovascular morbidities in mice. *Am. J. Physiol. Heart Circ. Physiol.* 314: H573-H579.
5. de Oliveira Silva, T., et al. 2022. MiRNA-143-3p-Sox6-MYH7 pathway is altered in obesogenic diet-induced cardiac hypertrophy. *Exp. Physiol.* 107: 892-905.

STORAGE

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



See **MYH7 (A4.840): sc-53089** for MYH7 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.