

MYH7 (A4.951): sc-53090



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 (A4.951) is a mouse monoclonal antibody raised against adult skeletal muscle myosin of human 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.

MYH7 (A4.951) is available conjugated to agarose (sc-53090 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53090 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53090 PE), fluorescein (sc-53090 FITC), Alexa Fluor[®] 488 (sc-53090 AF488), Alexa Fluor[®] 546 (sc-53090 AF546), Alexa Fluor[®] 594 (sc-53090 AF594) or Alexa Fluor[®] 647 (sc-53090 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53090 AF680) or Alexa Fluor[®] 790 (sc-53090 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MYH7 (A4.951) is recommended for detection of myosin heavy chain 7 of mouse, rat, human, rabbit and fish 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)], 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.

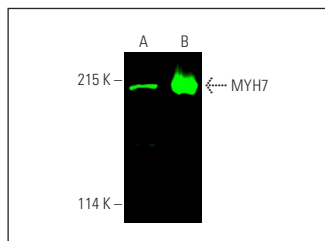
Molecular Weight of MYH7: 223 kDa.

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

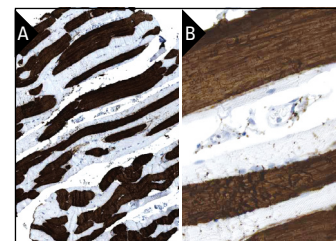
STORAGE

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

DATA



MYH7 (A4.951) Alexa Fluor[®] 680: sc-53090 AF680. Direct near-infrared western blot analysis of MYH7 expression in human heart (A) and human skeletal muscle (B) tissue extracts. Blocked with UltraCruz[®] Blocking Reagent: sc-516214.



MYH7 (A4.951): sc-53090. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing nuclear and cytoplasmic staining of myocytes at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

- Bian, Z.Y., et al. 2012. Disruption of mindin exacerbates cardiac hypertrophy and fibrosis. *J. Mol. Med.* 90: 895-910.
- Lu, J., et al. 2013. Interferon regulatory factor 3 is a negative regulator of pathological cardiac hypertrophy. *Basic Res. Cardiol.* 108: 326.
- Jiang, D.S., et al. 2014. IRF8 suppresses pathological cardiac remodeling by inhibiting calcineurin signalling. *Nat. Commun.* 5: 3303.
- Lindskog, C., et al. 2015. The human cardiac and skeletal muscle proteomes defined by transcriptomics and antibody-based profiling. *BMC Genomics* 16: 475.
- Huang, K., et al. 2017. Exogenous cathepsin V protein protects human cardiomyocytes HCM from Angiotensin II-Induced hypertrophy. *Int. J. Biochem. Cell Biol.* 89: 6-15.
- Protze, S.I., et al. 2017. Sinoatrial node cardiomyocytes derived from human pluripotent cells function as a biological pacemaker. *Nat. Biotechnol.* 35: 56-68.
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- Chen, C.M., et al. 2017. Human mesenchymal stem cells ameliorate experimental pulmonary hypertension induced by maternal inflammation and neonatal hypoxia in rats. *Oncotarget* 8: 82366-82375.
- Ho, N., et al. 2018. Estrogen receptor β maintains expression of KLF15 to prevent cardiac myocyte hypertrophy in female rodents. *Mol. Cell. Endocrinol.* 470: 240-250.

RESEARCH USE

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