SANTA CRUZ BIOTECHNOLOGY, INC.

MYH1/2/3 (N3.36): sc-53092

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin is a highly conserved, ubiquitously expressed protein that interacts with Actin to generate the force for cellular movements. Conventional myosins are hexameric proteins consisting of two heavy chain subunits, a pair of non-phosphorylatable light chain subunits and a pair of phosphorylatable light chain subunits. Three general classes of Myosin have been cloned: smooth muscle myosins, striated muscle myosins and non-muscle myosins. Contractile activity in smooth muscle is regulated by the calcium/calmodulin-dependent phosphorylation of Myosin light chain (MLC) by Myosin light chain kinase. Myosin heavy chains, which are encoded by the MYH gene family, contain Actin-activated ATPase activity which generates the motor function of Myosin. Myosin heavy chains were initially isolated from a human fetal skeletal muscle and are the major determinant in the speed of contraction of skeletal muscle. Various isoforms of Myosin heavy chains are differentially expressed depending on the functional activity of the muscle.

REFERENCES

1. Nagai, R., et al. 1989. Identification of two types of smooth muscle Myosin heavy chain isoforms by cDNA cloning and immunoblot analysis. J. Biol. Chem. 264: 9734-9737.
2. Karsch-Mizrachi, I., et al. 1990. Generation of a full-length human perinatal Myosin heavy-chain-encoding cDNA. Gene 89: 289-294.

CHROMOSOMAL LOCATION

Genetic locus: MYH1/MYH2/MYH3 (human) mapping to 17p13.1; Myh1/Myh2/Myh3 (mouse) mapping to 11 B3.

SOURCE

MYH1/2/3 (N3.36) is a mouse monoclonal antibody raised against neonatal 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.

STORAGE

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

APPLICATIONS

MYH1/2/3 (N3.36) is recommended for detection of Myosin heavy chains encoded by MYH1, MYH2 and MYH3 of mouse, rat, human, rabbit and fish 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).

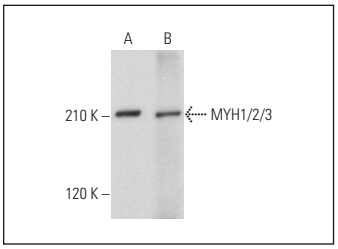
Molecular Weight of MYH1/2/3: 200 kDa.

Positive Controls: mouse skeletal muscle extract: sc-364250, HeLa whole cell lysate: sc-2200 or rat skeletal muscle extract: sc-364810.

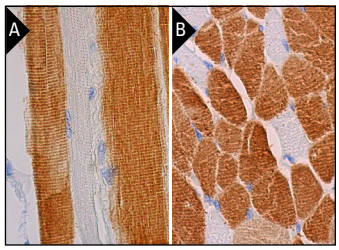
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MYH1/2/3 (N3.36): sc-53092. Western blot analysis of MYH1/2/3 expression in rat skeletal muscle (**A**) and mouse skeletal muscle (**B**) tissue extracts.



MYH1/2/3 (N3.36): sc-53092. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes. Blocking reagent used: UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Black, L.D., et al. 2009. Cell-induced alignment augments twitch force in fibrin gel-based engineered myocardium via gap junction modification. Tissue Eng. Part A 15: 3099-3108.
2. Shao, H., et al. 2010. α-actinin-4 is essential for maintaining the spreading, motility and contractility of fibroblasts. PLoS ONE 5: e13921.
3. Hernández-Ancheyta, L., et al. 2018. *Trichinella spiralis* muscle larvae excretory-secretory products induce changes in cytoskeletal and myogenic transcription factors in primary myoblast cultures. Int. J. Parasitol. 48: 275-285.
4. Jiang, S., et al. 2019. Acetylome profiling reveals extensive involvement of lysine acetylation in the conversion of muscle to meat. J. Proteomics 205: 103412.
5. Gogulothu, R., et al. 2019. Disrupted expression of genes essential for skeletal muscle fibre integrity and energy metabolism in vitamin D deficient rats. J. Steroid Biochem. Mol. Biol. 6: 105525.

RESEARCH USE

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