SANTA CRUZ BIOTECHNOLOGY, INC.

MYH2 (N2.261): sc-53096

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. Saez, C.G., et al. 1990. Human nonmuscle myosin heavy chain mRNA: generation of diversity through alternative polyadenylylation. Proc. Natl. Acad. Sci. USA 87: 1164-1168.
2. Hughes, S.M., et al. 1993. Three slow myosin heavy chains sequentially expressed in developing mammalian skeletal muscle. Dev. Biol. 158: 183-199.

CHROMOSOMAL LOCATION

Genetic locus: MYH2 (human) mapping to 17p13.1; Myh2 (mouse) mapping to 11 B3.

SOURCE

MYH2 (N2.261) is a mouse monoclonal antibody raised against neonatal skeletal muscle Myosin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MYH2 (N2.261) is recommended for detection of neonatal slow like MYH2 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).

Suitable for use as control antibody for MYH2 siRNA (h): sc-106273, MYH2 siRNA (m): sc-149741, MYH2 shRNA Plasmid (h): sc-106273-SH, MYH2 shRNA Plasmid (m): sc-149741-SH, MYH2 shRNA (h) Lentiviral Particles: sc-106273-V and MYH2 shRNA (m) Lentiviral Particles: sc-149741-V.

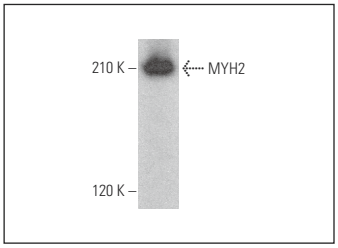
Molecular Weight of MYH2: 200 kDa.

Positive Controls: human skeletal muscle extract: sc-363776, rat skeletal muscle extract: sc-364810 or RD whole cell lysate: sc-364791.

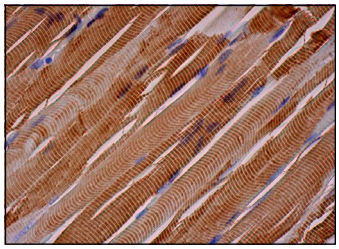
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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



MYH2 (N2.261): sc-53096. Western blot analysis of MYH2 expression in human skeletal muscle tissue extract.



MYH2 (N2.261): sc-53096. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. 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.
2. Tucker, N.R., et al. 2017. Novel mutation in FLNC (Filamin C) causes familial restrictive cardiomyopathy. Circ. Cardiovasc. Genet. 10: e001780.
3. Ramirez-Martinez, A., et al. 2021. The nuclear envelope protein Net39 is essential for muscle nuclear integrity and chromatin organization. Nat. Commun. 12: 690.

STORAGE

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

RESEARCH USE

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

CONJUGATES

See **MYH2 (A4.74): sc-53095** for MYH2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.