SANTA CRUZ BIOTECHNOLOGY, INC.

MYH3 (F1.652): sc-53091

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells. Actin filaments can form both stable and labile structures, and are crucial components of microvilli and the contractile apparatus of muscle cells. Myosin is a hexamer of two heavy chains (MHC) and four light chains (MLC) that interact with Actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. MYH3 (Myosin heavy chain 3), also known as muscle embryonic Myosin heavy chain or SMHCE, is a 1,940 amino acid that localizes to the thick filaments of myofibrils. While highly expressed in fetal skeletal muscle, MYH3 is barely detectable in adult skeletal muscle. Defects in the gene encoding MYH3, which maps to human chromosome 17p13.1, are the cause of distal arthrogryposis type 2B (DA2B).

CHROMOSOMAL LOCATION

Genetic locus: MYH3 (human) mapping to 17p13.1; Myh3 (mouse) mapping to 11 B3.

SOURCE

MYH3 (F1.652) is a mouse monoclonal antibody raised against fetal 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.

MYH3 (F1.652) is available conjugated to agarose (sc-53091 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53091 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53091 PE), fluorescein (sc-53091 FITC), Alexa Fluor® 488 (sc-53091 AF488), Alexa Fluor® 546 (sc-53091 AF546), Alexa Fluor® 594 (sc-53091 AF594) or Alexa Fluor® 647 (sc-53091 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53091 AF680) or Alexa Fluor® 790 (sc-53091 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, MYH3 (F1.652) is available conjugated to biotin (sc-53091 B), 200 µg/ml, for WB, IHC(P) and ELISA.

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

APPLICATIONS

MYH3 (F1.652) is recommended for detection of myosin heavy chain encoded by MYH3 of mouse, rat, human and rabbit 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 MYH3 siRNA (h): sc-93798, MYH3 siRNA (m): sc-149742, MYH3 shRNA Plasmid (h): sc-93798-SH, MYH3 shRNA Plasmid (m): sc-149742-SH, MYH3 shRNA (h) Lentiviral Particles: sc-93798-V and MYH3 shRNA (m) Lentiviral Particles: sc-149742-V.

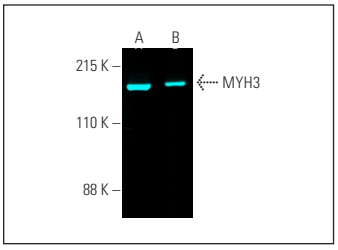
Molecular Weight of MYH3: 200 kDa.

Positive Controls: L8 cell lysate: sc-3807 or rat embryo extract: sc-364803.

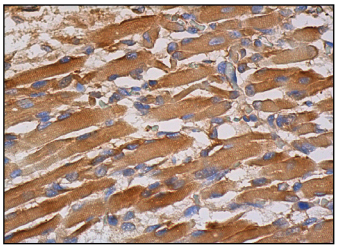
STORAGE

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

DATA



MYH3 (F1.652) Alexa Fluor® 647: sc-53091 AF647. Direct fluorescent western blot analysis of MYH3 expression in L8 whole cell lysate (**A**) and rat embryo tissue extract (**B**). Blocked with UltraCruz® Blocking Reagent: sc-516214.



MYH3 (F1.652): sc-53091. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse embryonic skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Tran, T.H., et al. 2012. Heparan sulfate 6-O-endosulfatases (Sulfs) coordinate the Wnt signaling pathways to regulate myoblast fusion during skeletal muscle regeneration. J. Biol. Chem. 287: 32651-32664.
2. Foletta, V.C., et al. 2013. Ndrg2 is a PGC-1α/ERRα target gene that controls protein synthesis and expression of contractile-type genes in C2C12 myotubes. Biochim. Biophys. Acta 1833: 3112-3123.
3. Hisamatsu, D., et al. 2016. Growth differentiation factor 6 derived from mesenchymal stem/stromal cells reduces age-related functional deterioration in multiple tissues. Aging 8: 1259-1275.
4. Pasteuning-Vuhman, S., et al. 2017. Natural disease history of mouse models for limb girdle muscular dystrophy types 2D and 2F. PLoS ONE 12: e0182704.
5. Hwang, S.Y., et al. 2018. Folic acid is necessary for proliferation and differentiation of C2C12 myoblasts. J. Cell. Physiol. 233: 736-747.
6. Guiraud, S., et al. 2019. Embryonic Myosin is a regeneration marker to monitor utrophin based therapies for DMD. Hum. Mol. Genet. 28: 307-319.
7. Sarchielli, E., et al. 2020. Testosterone improves muscle fiber asset and exercise performance in a metabolic syndrome model. J. Endocrinol. 245: 259-279.
8. Lee, S.S., et al. 2021. Betaine, a component of *Lycium chinense,* enhances muscular endurance of mice and myogenesis of myoblasts. Food Sci. Nutr. 9: 5083-5091.
9. Caratti, G., et al. 2023. Macrophagic AMPKα1 orchestrates regenerative inflammation induced by glucocorticoids. EMBO Rep. 24: e55363.

RESEARCH USE

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