SANTA CRUZ BIOTECHNOLOGY, INC.

MYL (F-5): sc-365243

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myosin, the major component of thick muscle filaments, is a long asymmetric molecule containing a globular head and a long tail. Activation of smooth and cardiac/ventricular muscle primarily involves pathways which increase calcium and Myosin phosphorylation, resulting in contraction. In vertebrate striated muscle, Myosin is composed of two heavy chains and four light chains. There are two distinct types of light chains: the phosphorylatable, regulatory or MLC2 type, and the non-phosphorylatable, alkali or MLC1 and MLC3 types. The role of Myosin alkali light chains in vertebrate skeletal muscle is poorly understood, although alkali light chains in smooth muscle may be involved with the active site of Myosin. Several Myosin alkali light chains have been identified and include MYL1, MYL3, MYL4 and MYL6.

REFERENCES

1. Barton, P.J. and Buckingham, M.E. 1985. The Myosin alkali light chain proteins and their genes. Biochem. J. 231: 249-261.
2. Seidel, U., et al. 1987. The complete nucleotide sequences of cDNA clones coding for human Myosin light chains 1 and 3. Nucleic Acids Res. 15: 4989.

SOURCE

MYL (F-5) is a mouse monoclonal antibody raised against amino acids 121-195 mapping at the C-terminus of MYL3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MYL (F-5) is available conjugated to agarose (sc-365243 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365243 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365243 PE), fluorescein (sc-365243 FITC), Alexa Fluor® 488 (sc-365243 AF488), Alexa Fluor® 546 (sc-365243 AF546), Alexa Fluor® 594 (sc-365243 AF594) or Alexa Fluor® 647 (sc-365243 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365243 AF680) or Alexa Fluor® 790 (sc-365243 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MYL (F-5) is recommended for detection of MYL1, MYL3, MYL4 and MYL6 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of MYL1: 21 kDa.

Molecular Weight of MYL3: 25 kDa.

Molecular Weight of MYL4: 22 kDa.

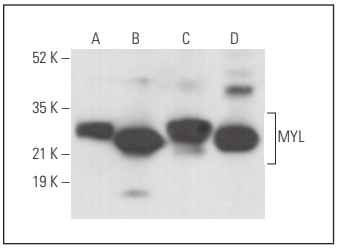
Molecular Weight of MYL6: 17 kDa.

Positive Controls: rat heart extract: sc-2393, mouse heart extract: sc-2254 or human heart extract: sc-363763.

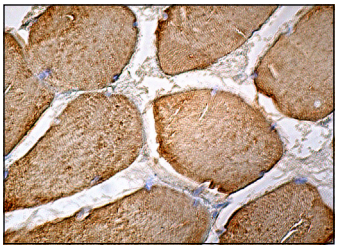
RECOMMENDED SUPPORT REAGENTS

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



MYL (F-5): sc-365243. Western blot analysis of MYL expression in rat heart (**A**), rat tongue (**B**), mouse heart (**C**) and human heart (**D**) tissue extracts.



MYL (F-5): sc-365243. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Zhao, J., et al. 2018. Age-dependent increase in angiopoietin-like protein 2 accelerates skeletal muscle loss in mice. J. Biol. Chem. 293: 1596-1609.
2. Unuma, K., et al. 2018. The down-regulation of cardiac contractile proteins underlies myocardial depression during sepsis and is mitigated by carbon monoxide. Biochem. Biophys. Res. Commun. 495: 1668-1674.
3. AlSudais, H., et al. 2019. Contaminating reactivity of a monoclonal CCAAT/enhancer binding protein β antibody in differentiating myoblasts. BMC Res. Notes 12: 717.
4. Ding, J., et al. 2020. Myosin light chain kinase inhibitor ML7 improves vascular endothelial dysfunction and permeability via the mitogen-activated protein kinase pathway in a rabbit model of atherosclerosis. Biomed. Pharmacother. 128: 110258.
5. Nomura, M., et al. 2021. Sustained splenic contraction after daily cocaine administration in rats. PLoS ONE 16: e0252853.

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.