SANTA CRUZ BIOTECHNOLOGY, INC.

MYL12B (29): sc-130331

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. Myosin regulatory light chains, including MYL12A (also known as MRLC3 or MLCB), MYL12B (also known as MRLC2) and MYL9 (also known as LC20, MLC2, MRLC1 or MYRL2), regulate contraction in smooth muscle and non-muscle cells via phosphorylation by myosin light chain kinase (MLCK). Phosphorylation of myosin regulatory light chains, catalyzed by MLCK in the presence of calcium and calmodulin, increases the Actin-activated myosin ATPase activity, thereby regulating the contractile activity. Myosin light chain is also located in striated skeletal muscle, where its function remains undefined.

REFERENCES

1. Kumar, C.C., et al. 1989. Characterization and differential expression of human vascular smooth muscle myosin light chain 2 isoform in nonmuscle cells. Biochemistry 28: 4027-4035.
2. Kolodney, M.S., et al. 1999. Ca^{2+}-independent myosin II phosphorylation and contraction in chicken embryo fibroblasts. J. Physiol. 515: 87-92.
3. Sward, K., et al. 2000. Inhibition of Rho-associated kinase blocks agonist-induced Ca^{2+} sensitization of myosin phosphorylation and force in guinea-pig ileum. J. Physiol. 522: 33-49.
4. Numata, T., et al. 2001. Functional role of the C-terminal domain of smooth muscle myosin light chain kinase on the phosphorylation of smooth muscle myosin. J. Biochem. 129: 437-444.
5. Nobe, H., et al. 2003. Rho kinase mediates serum-induced contraction in fibroblast fibers independent of myosin LC20 phosphorylation. Am. J. Physiol. Cell Physiol. 284: C599-C606.

CHROMOSOMAL LOCATION

Genetic locus: MYL12B (human) mapping to 18p11.31; Myl12b (mouse) mapping to 17 E1.3.

SOURCE

MYL12B (29) is a mouse monoclonal antibody raised against recombinant MYL12B 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.

STORAGE

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

APPLICATIONS

MYL12B (29) is recommended for detection of MYL12B of mouse, rat and human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MYL12B siRNA (h): sc-106242, MYL12B shRNA Plasmid (h): sc-106242-SH and MYL12B shRNA (h) Lentiviral Particles: sc-106242-V.

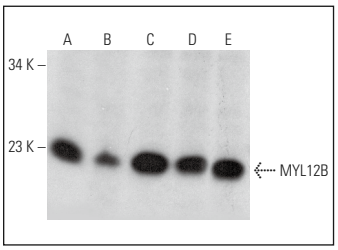
Molecular Weight of MYL12B: 20 kDa.

Positive Controls: HUV-EC-C whole cell lysate: sc-364180, SK-BR-3 cell lysate: sc-2218 or WI-38 whole cell lysate: sc-364260.

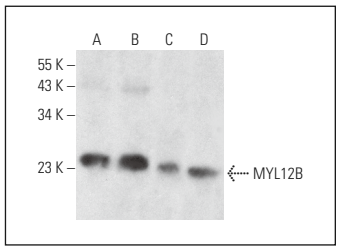
RECOMMENDED SUPPORT REAGENTS

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).

DATA



MYL12B (29): sc-130331. Western blot analysis of MYL12B expression in WI-38 (**A**), NIH/3T3 (**B**), Sol8 (**C**), L8 (**D**) and RAT2 (**E**) whole cell lysates.



MYL12B (29): sc-130331. Western blot analysis of MYL12B expression in WI-38 (**A**), HUV-EC-C (**B**), SK-BR-3 (**C**) and JC (**D**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.