

# MYL12A/B (A-10): sc-376606

## 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 MRCL3 or MLCB), MYL12B (also known as MRCL2) and MYL9 (also known as LC20, MLC2, MRCL1 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.

## CHROMOSOMAL LOCATION

Genetic locus: MYL12A/MYL12B (human) mapping to 18p11.31; Myl12b (mouse) mapping to 17 E1.3.

## SOURCE

MYL12A/B (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 103-141 within an internal region of MYL12A of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MYL12A/B (A-10) is available conjugated to agarose (sc-376606 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376606 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376606 PE), fluorescein (sc-376606 FITC), Alexa Fluor® 488 (sc-376606 AF488), Alexa Fluor® 546 (sc-376606 AF546), Alexa Fluor® 594 (sc-376606 AF594) or Alexa Fluor® 647 (sc-376606 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376606 AF680) or Alexa Fluor® 790 (sc-376606 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376606 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

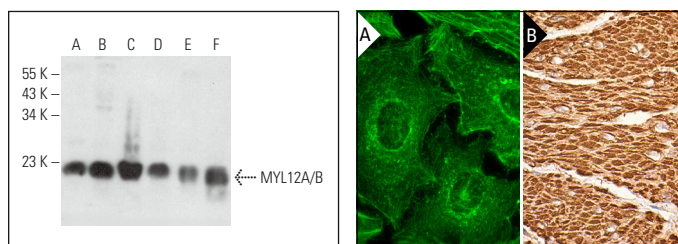
MYL12A/B (A-10) is recommended for detection of the Myosin regulatory light chains encoded by MYL12A and MYL12B of human origin, Mylc2b of mouse origin and Mrlcb of rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total 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). MYL12A/B (A-10) is also recommended for detection of the myosin regulatory light chains encoded by MYL12A and MYL12B in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Mylc2b siRNA (m): sc-149751, Mylc2b shRNA Plasmid (m): sc-149751-SH and Mylc2b shRNA (m) Lentiviral Particles: sc-149751-V.

Molecular Weight of MYL9/MRCL2/MRCL3: 20 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HUV-EC-C whole cell lysate: sc-364180 or C2C12 whole cell lysate: sc-364188.

## DATA



MYL12A/B (A-10): sc-376606. Western blot analysis of MYL12A/B expression in MCF7 (A), HUV-EC-C (B), C2C12 (C), EOC 20 (D), C6 (E) and L8 (F) whole cell lysates.

MYL12A/B (A-10): sc-376606. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells (B).

## SELECT PRODUCT CITATIONS

- Shimizu, Y., et al. 2005. ROCK-1 regulates closure of the eyelids and ventral body wall by inducing assembly of actomyosin bundles. *J. Cell Biol.* 168: 941-953.
- Da Ros, F., et al. 2017. Targeting interleukin-1 $\beta$  protects from aortic aneurysms induced by disrupted transforming growth factor  $\beta$  signaling. *Immunity* 47: 959-973.e9.
- AlSudais, H., et al. 2019. Contaminating reactivity of a monoclonal CCAAT/enhancer binding protein  $\beta$  antibody in differentiating myoblasts. *BMC Res. Notes* 12: 717.
- Oya, R., et al. 2021. Phosphorylation of MYL12 by Myosin light chain kinase regulates cellular shape changes in cochlear hair cells. *J. Assoc. Res. Otolaryngol.* 22: 425-441.

## RESEARCH USE

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