

# MYL1 (L-13): sc-100342

## 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. Myosin in vertebrate striated muscle 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 nonphosphorylatable, alkali or MLC1 and MLC3 types. Myosin light chain phosphatase acts to regulate muscle contraction by dephosphorylating activated Myosin light chain. 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 isoforms of Myosin alkali light chains have been identified, encoded by a family of Myosin light chain genes. Each is associated with different muscle types. MYL1 (Myosin light chain 3, skeletal muscle isoform), also known as MLC1F or MLC3F, is a hexameric ATPase cellular motor protein that is composed of two heavy chains, two nonphosphorylatable alkali light chains, and two phosphorylatable regulatory light chains. MYL1 is expressed in fast skeletal muscle and two isoforms exists due to alternative splicing.

## 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.
3. Cohen-Haguenuer, O., et al. 1988. Assignment of the human fast skeletal muscle Myosin alkali light chains gene (MLC1F/MLC3F) to 2q32.1-2qter. *Hum. Genet.* 78: 65-70.
4. Cohen-Haguenuer, O., et al. 1989. Chromosomal assignment of two Myosin alkali light-chain genes encoding the ventricular/slow skeletal muscle isoform and the atrial/fetal muscle isoform (MYL3, MYL4). *Hum. Genet.* 81: 278-282.

## CHROMOSOMAL LOCATION

Genetic locus: MYL1 (human) mapping to 2q34.

## SOURCE

MYL1 (L-13) is a mouse monoclonal antibody raised against recombinant MYL1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> 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.

## RESEARCH USE

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

## APPLICATIONS

MYL1 (L-13) is recommended for detection of MYL1 of 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)], 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).

Suitable for use as control antibody for MYL1 siRNA (h): sc-106267, MYL1 shRNA Plasmid (h): sc-106267-SH and MYL1 shRNA (h) Lentiviral Particles: sc-106267-V.

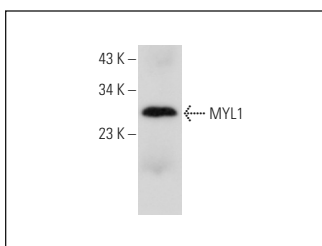
Molecular Weight of MYL1: 21 kDa.

Positive Controls: human skeletal muscle extract: sc-363776.

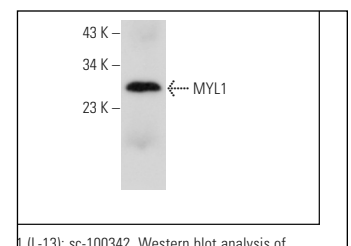
## RECOMMENDED SUPPORT REAGENTS

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



MYL1 (L-13): sc-100342. Western blot analysis of MYL1 expression in human skeletal muscle tissue extract.



(L-13): sc-100342. Western blot analysis of

MYL1 (L-13): sc-100342. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human spleen tissue showing nuclear and cytoplasmic localization.

## PROTOCOLS

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