

# MYL3 (G-12): sc-49054

## 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. Human myosin light chain can be used as a cardiac marker. Myosin light chain 3, encoded by MYL3, is an alkali light chain also referred to as both the ventricular isoform (MLC1v) and slow skeletal muscle isoform. Myosin light chain 3 proteins in human and mouse share 91% sequence identity overall.

## 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., Bober, E., Winter, B., Lenz, S., Lohse, P. and Arnold, H.H. 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., Barton, P.J., Nguyen, V.C., Serero, S., Gross, M.S., Jegou-Foubert, C., de Tand, M.F., Robert, B., Buckingham, M. and Frezal, J. 1988. Assignment of the human fast skeletal muscle Myosin alkali light chains gene (MLC1F/MLC3F) to 2q 32.1-2qter. *Hum. Genet.* 78: 65-70.

## CHROMOSOMAL LOCATION

Genetic locus: MYL3 (human) mapping to 3p21.31; Myl3 (mouse) mapping to 9 F3.

## SOURCE

MYL3 (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MYL3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49054 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

MYL3 (G-12) is recommended for detection of myosin light chain 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

MYL3 (G-12) is also recommended for detection of myosin light chain 3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MYL3 siRNA (h): sc-44542, MYL3 siRNA (m): sc-61054, MYL3 shRNA Plasmid (h): sc-44542-SH, MYL3 shRNA Plasmid (m): sc-61054-SH, MYL3 shRNA (h) Lentiviral Particles: sc-44542-V and MYL3 shRNA (m) Lentiviral Particles: sc-61054-V.

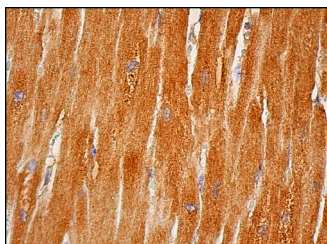
Molecular Weight of MYL3: 25 kDa.

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

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



MYL3 (G-12): sc-49054. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## RESEARCH USE

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

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Try **MYL3 (MLM527): sc-58804**, our highly recommended monoclonal alternative to MYL3 (G-12).