

# MYL2 (AT3B2): sc-517414

## BACKGROUND

Encoded by the MYL2 gene, myosin regulatory light chain 2, ventricular/cardiac muscle isoform, also designated MLC-2 or MLC2v, is part of a hexameric complex of two heavy chains and four light chains predominantly expressed in adult cardiac ventricle muscle. Myosin regulatory light chain 2 binds calcium and has been shown to be a useful molecular marker for cardiac chamber specification. The co-expression of myosin regulatory light chain 7 (MYL7) and myosin regulatory light chain 2 in the outflow tract and atrioventricular canal, together with the single expression in the atrial (MYL7) and ventricular (MYL2) myocardium, permits the delineation of their boundaries. At the amino acid level there is 96% homology between the human and mouse myosin regulatory light chain sequences. Mutations in MYL2 are correlated with mid-left ventricular chamber type hypertrophic cardiomyopathy (MVC2) as well as familial hypertrophic cardiomyopathy type 10 (CMH10).

## REFERENCES

1. Kubalak, S.W., et al. 1994. Chamber specification of atrial MLC2 expression precedes septation during murine cardiogenesis. *J. Biol. Chem.* 269: 16961-16970.
2. Gruber, P.J., et al. 1998. Downregulation of atrial markers during cardiac chamber morphogenesis is irreversible in murine embryos. *Development* 125: 4427-4438.
3. Franco, D., et al. 1999. MLC2a and 2v identifies the embryonic outflow tract myocardium in the developing rodent heart. *Anat. Rec.* 254: 135-146.
4. Doevendans, P.A., et al. 2000. The murine atrial MLC2 gene: a member of an evolutionarily conserved family of contractile proteins. *Cytogenet. Cell Genet.* 90: 248-252.
5. Nishigaki, R., et al. 2002. An extra human chromosome 21 reduces MLC-2a expression in chimeric mice and down syndrome. *Biochem. Biophys. Res. Commun.* 295: 112-118.

## CHROMOSOMAL LOCATION

Genetic locus: Myl2 (mouse) mapping to 5 F.

## SOURCE

MYL2 (AT3B2) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-166 of MYL2 of human origin.

## PRODUCT

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

## PROTOCOLS

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

## APPLICATIONS

MYL2 (AT3B2) is recommended for detection of MYL2 of mouse and rat 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), flow cytometry (1 µg per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MYL2 siRNA (m): sc-45415, MYL2 shRNA Plasmid (m): sc-45415-SH and MYL2 shRNA (m) Lentiviral Particles: sc-45415-V.

Molecular Weight of MYL2: 18-20 kDa.

## 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) 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.

## SELECT PRODUCT CITATIONS

1. Carlson, D.A., et al. 2018. Targeting Pim kinases and DAPK3 to control hypertension. *Cell Chem. Biol.* 25: 1195-1207.e32.
2. Wong, D.C.P., et al. 2022. BNIP-2 activation of cellular contractility inactivates YAP for H9c2 cardiomyoblast differentiation. *Adv. Sci.* E-published.

## RESEARCH USE

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