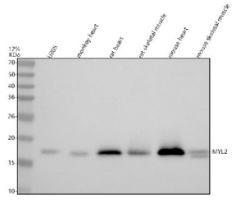
MYL2 Antibody / Myosin regulatory light chain 2 (FY13066)

Catalog No.	Formulation	Size
FY13066	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Monkey, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P10916
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This MYL2 antibody is available for research use only.



Western blot analysis of Myosin Light Chain 2/MLC-2V/MYL2 using anti-MYL2 antibody. Lane 1: human U20S whole cell lysates, Lane 2: monkey heart tissue lysates, Lane 3: rat heart tissue lysates, Lane 4: rat skeletal muscle tissue lysates, Lane 5: mouse heart tissue lysates, Lane 6: mouse skeletal muscle lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-MYL2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for Myosin Light Chain 2/MLC-2V/MYL2 at approximately 19 kDa. The expected molecular weight of Myosin Light Chain 2/MLC-2V/MYL2 is at 19 kDa.

Description

MYL2 antibody detects myosin regulatory light chain 2, a contractile protein critical for cardiac and skeletal muscle contraction. The UniProt recommended name is Myosin regulatory light chain 2 (MYL2). This 166-amino-acid protein binds to the neck region of myosin heavy chain, stabilizing the lever-arm structure and modulating actin-activated ATPase

activity during force generation.

Functionally, MYL2 antibody identifies a calcium-binding protein that undergoes phosphorylation by myosin light chain kinase (MLCK) at serine 15. Phosphorylation increases calcium sensitivity and enhances contractile force, playing a vital role in excitation-contraction coupling. MYL2 expression is strongest in cardiac ventricles, distinguishing it from atrial isoforms such as MYL7. Its presence marks ventricular myocytes in both mature and differentiating cardiac tissue.

The MYL2 gene resides on chromosome 12q24.11 and encodes a regulatory component of the myosin complex. Mutations in MYL2 have been associated with familial hypertrophic cardiomyopathy, left ventricular dysfunction, and sudden cardiac death. These variants alter protein folding or phosphorylation sites, impairing actomyosin cross-bridge cycling and contractile mechanics.

In muscle physiology, MYL2 acts as a fine-tuner of myosin motor function, adjusting contraction kinetics through dynamic phosphorylation. In developmental studies, MYL2 serves as a ventricular differentiation marker, while in pathology it reflects remodeling in cardiac hypertrophy and failure. Experimental models using MYL2 antibody provide insights into sarcomere assembly, cardiomyocyte maturation, and myofibrillar alignment.

MYL2 antibody is suitable for western blotting, immunohistochemistry, and immunofluorescence to detect cardiac myosin light chain expression. It is extensively used in cardiovascular research, muscle biology, and regenerative medicine to monitor contractile protein regulation. NSJ Bioreagents offers validated MYL2 antibody reagents optimized for studies of cardiac physiology and disease.

Structurally, MYL2 belongs to the EF-hand calcium-binding family and interacts with the IQ motif of myosin heavy chains. Its N-terminal domain modulates ATP hydrolysis and contributes to sarcomeric order. This antibody enables precise detection of MYL2 to study contractile regulation, disease mechanisms, and cardiomyocyte differentiation.

Application Notes

Optimal dilution of the MYL2 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Myosin Light Chain 2/MLC-2V/MYL2 was used as the immunogen for the MYL2 antibody.

Storage

After reconstitution, the MYL2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.