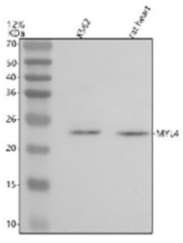
MYL4 Antibody / Myosin light chain 4 (FY12729)

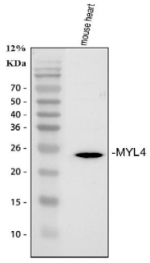
Catalog No.	Formulation	Size
FY12729	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	P12829
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This MYL4 antibody is available for research use only.



Western blot analysis of MYL4 using anti-MYL4 antibody. Lane 1: human K562 whole cell lysates, Lane 2: rat heart tissue 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-MYL4 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. The expected molecular weight of MYL4 is ~22 kDa.



Western blot analysis of MYL4 using anti-MYL4 antibody. Lane 1: mouse heart tissue 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-MYL4 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. The expected molecular weight of MYL4 is ~22 kDa.

Description

MYL4 antibody detects Myosin light chain 4 (also known as Atrial light chain 1 or ALC-1), a regulatory myosin light chain predominantly expressed in cardiac atrial muscle and embryonic skeletal muscle. Encoded by the MYL4 gene on chromosome 17q21.32, this protein plays an essential role in actomyosin interactions that generate contractile force. Myosin light chain 4 binds to the neck region of myosin heavy chains and modulates ATPase activity, influencing contraction velocity and calcium sensitivity. The protein's phosphorylation status fine-tunes muscle contractility and adaptation to physiological demands.

MYL4 is expressed abundantly in atrial cardiomyocytes, where it contributes to the high contraction frequency of the atria. During development, MYL4 is also expressed in ventricles and skeletal muscle before being downregulated postnatally, replaced by other myosin light chain isoforms. Re-expression of MYL4 in adult ventricles has been reported under pathological conditions such as hypertrophic cardiomyopathy, heart failure, and atrial fibrillation, suggesting a role in cardiac remodeling and disease adaptation. The protein forms part of the sarcomeric thick filament complex and interacts with myosin heavy chain alpha and beta isoforms to regulate actin-myosin cross-bridge cycling.

The MYL4 antibody is widely used in cardiovascular and muscle physiology research to study contractile protein composition, developmental regulation, and disease-associated remodeling. Western blot analysis typically identifies a 22 kilodalton band corresponding to MYL4, while immunohistochemistry reveals strong cytoplasmic staining in atrial tissue and developing muscle fibers. The antibody assists in assessing cardiac maturation, contractile diversity, and cellular hypertrophy mechanisms. Because MYL4 has been implicated in atrial fibrillation and abnormal calcium handling, its detection provides diagnostic and mechanistic insights into heart rhythm disorders.

Beyond the heart, MYL4 contributes to cytoskeletal organization and mechanotransduction in non-muscle cells. It also interacts with actin-regulating kinases and phosphatases that modify contractile responses. In molecular studies, MYL4 serves as a marker of atrial differentiation and a target for evaluating cardiac-specific gene expression in regenerative models. The MYL4 antibody supplied by NSJ Bioreagents is validated for its applications, ensuring high specificity in detecting Myosin light chain 4 in cardiac and muscle tissues.

Application Notes

Optimal dilution of the MYL4 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequencein the middle region of human MYL4 was used as the immunogen for the MYL4 antibody.

Storage

After reconstitution, the MYL4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.