abcam

Product datasheet

# Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] ab234431

Recombinant RabMAb

★★★★★ 1 Abreviews 4 References 9 Images

## Overview

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|---|---|
| **Product name** | Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] |
| **Description** | Rabbit monoclonal [EPR22697-17] to Slow Skeletal Myosin Heavy chain |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** mIHC, IHC-P, IHC-Fr<br>**Unsuitable for:** ICC/IF,IP or WB |
| **Species reactivity** | **Reacts with:** Mouse, Rat, Human |
| **Immunogen** | Synthetic peptide. This information is proprietary to Abcam and/or its suppliers. |
| **Positive control** | IHC-P: Human skeletal muscle, cardiac muscle and spleen tissue; Mouse and rat cardiac muscle tissue. IHC-Fr: Mouse and rat skeletal muscle tissue. mIHC: Human skeletal muscle tissue. |
| **General notes** | This product is a recombinant monoclonal antibody, which offers several advantages including:<br>- High batch-to-batch consistency and reproducibility<br>- Improved sensitivity and specificity<br>- Long-term security of supply<br>- Animal-free production<br>For more information **see here**.<br>Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**. |

## Properties

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| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle. |
| **Storage buffer** | pH: 7.2<br>Preservative: 0.01% Sodium azide<br>Constituents: 40% Glycerol (glycerin, glycerine), 0.05% BSA, PBS |
| **Purity** | Protein A purified |
| **Clonality** | Monoclonal |

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| **Clone number** | EPR22697-17 |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab234431 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application | Abreviews | Notes |
|---|---|---|
| **mIHC** | | Use a concentration of 0.255 µg/ml. |
| **IHC-P** | ★★★★★ (1) | 1/2000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins. |
| **IHC-Fr** | | 1/200.<br>Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20) |

**Application notes** Is unsuitable for ICC/IF,IP or WB.

## Target

**Function** Muscle contraction.

**Tissue specificity** Both wild type and variant Gln-403 are detected in skeletal muscle (at protein level).

**Involvement in disease** Defects in MYH7 are the cause of cardiomyopathy familial hypertrophic type 1 (CMH1) [MIM:192600]. Familial hypertrophic cardiomyopathy is a hereditary heart disorder characterized by ventricular hypertrophy, which is usually asymmetric and often involves the interventricular septum. The symptoms include dyspnea, syncope, collapse, palpitations, and chest pain. They can be readily provoked by exercise. The disorder has inter- and intrafamilial variability ranging from benign to malignant forms with high risk of cardiac failure and sudden cardiac death.
Defects in MYH7 are the cause of myopathy myosin storage (MYOMS) [MIM:608358]. In this disorder, muscle biopsy shows type 1 fiber predominance and increased interstitial fat and connective tissue. Inclusion bodies consisting of the beta cardiac myosin heavy chain are present in the majority of type 1 fibers, but not in type 2 fibers.
Defects in MYH7 are the cause of scapuloperoneal myopathy MYH7-related (SPMM) [MIM:181430]; also known as scapuloperoneal syndrome myopathic type. SPMM is a progressive muscular atrophia beginning in the lower legs and affecting the shoulder region earlier and more severely than distal arm.
Defects in MYH7 are a cause of cardiomyopathy dilated type 1S (CMD1S) [MIM:613426]. Dilated cardiomyopathy is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death.
Defects in MYH7 are the cause of myopathy distal type 1 (MPD1) [MIM:160500]. MPD1 is a muscular disorder characterized by early-onset selective weakness of the great toe and ankle dorsiflexors, followed by weakness of the finger extensors. Mild proximal weakness occasionally develops years later after the onset of the disease.

**Sequence similarities** Contains 1 IQ domain.

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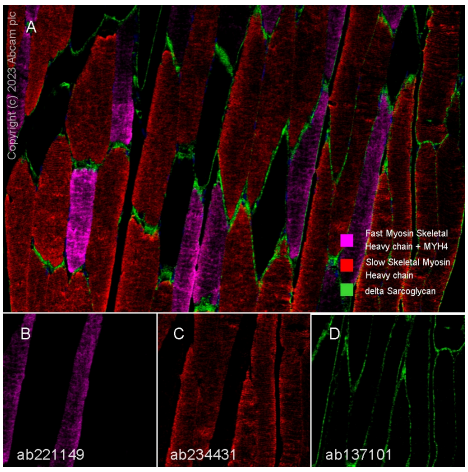
| | Contains 1 myosin head-like domain. |
| **Domain** | The rodlike tail sequence is highly repetitive, showing cycles of a 28-residue repeat pattern composed of 4 heptapeptides, characteristic for alpha-helical coiled coils.<br>Each myosin heavy chain can be split into 1 light meromyosin (LMM) and 1 heavy meromyosin (HMM). It can later be split further into 2 globular subfragments (S1) and 1 rod-shaped subfragment (S2). |
| **Cellular localization** | Cytoplasm > myofibril. Thick filaments of the myofibrils. |

## Images




Multiplex immunohistochemistry - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

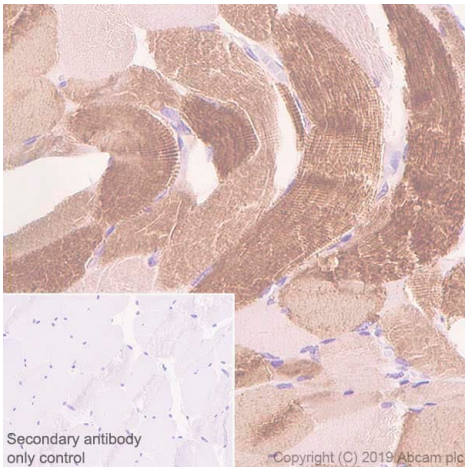
Fluorescence multiplex immunohistochemical analysis of the human skeletal muscle (Formalin/PFA-fixed paraffin-embedded sections).

Panel A: merged staining of anti-delta Sarcoglycan (**ab137101**, green; Opal™690), anti-Fast Myosin Skeletal Heavy chain + MYH4 (**ab221149**, magenta; Opal™520) and anti-Slow Skeletal Myosin Heavy chain (ab234431, red; Opal™570) on human skeletal muscle. Panel B: anti-Fast Myosin Skeletal Heavy chain + MYH4 stained on fast type fibers. Panel C: anti-Slow Skeletal Myosin Heavy chain stained on slow type fibers. Panel D: anti-delta Sarcoglycan stained on membrane of skeletal muscle. Opal Polymer HRP Ms + Rb was used as a secondary antibody.

The section was incubated in three rounds of staining: in the order of **ab137101** at 1/1000 (1.043 µg/ml), **ab221149** at 1/1000 (0.505 µg/ml, and ab234431 at 1/4000 (0.255 µg/ml) for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. DAPI (blue) was used as a nuclear counter stain.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

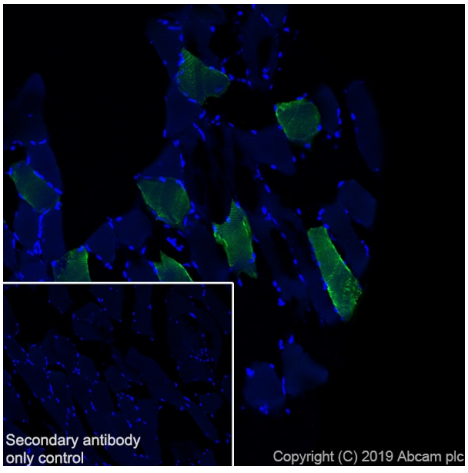



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**). Cytoplasmic staining on the human skeletal muscle (PMID: 22530000). The section was incubated with ab234431 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**).

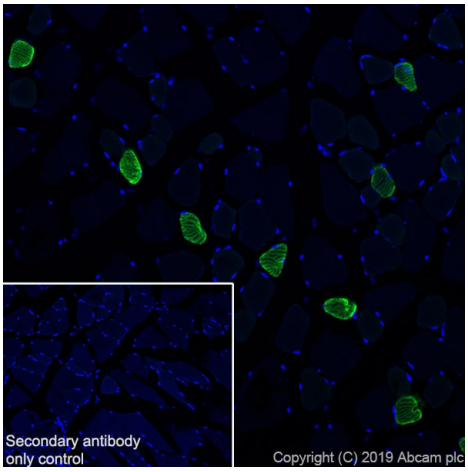
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.




Immunohistochemistry (Frozen sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of 4% paraformaldehyde-fixed 0.2% Triton X-100 permeabilized rat skeletal muscle tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution (green), followed by an AlexaFluor®488 Goat anti-Rabbit secondary (**ab150077**) at 1/1000 dilution. Cytoplasmic staining on the rat skeletal muscle (PMID: 29193153). The nuclear counterstain was DAPI (Blue).

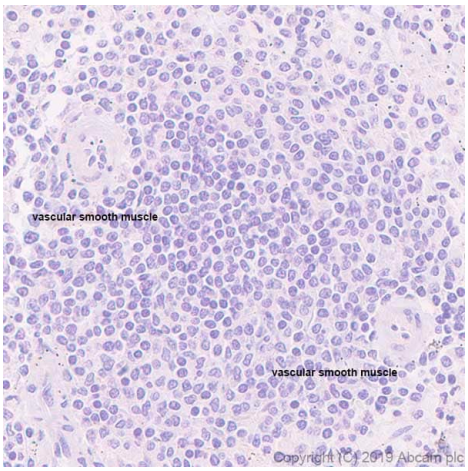
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is an AlexaFluor®488 Goat anti-Rabbit secondary (**ab150077**) at 1/1000 dilution.




Immunohistochemistry (Frozen sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of 4% paraformaldehyde-fixed 0.2% Triton X-100 permeabilized mouse skeletal muscle tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution (green), followed by an AlexaFluor®488 Goat anti-Rabbit secondary (**ab150077**) at 1/1000 dilution. Cytoplasmic staining on the mouse skeletal muscle (PMID: 29193153). The nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is an AlexaFluor®488 Goat anti-Rabbit secondary (**ab150077**) at 1/1000 dilution.

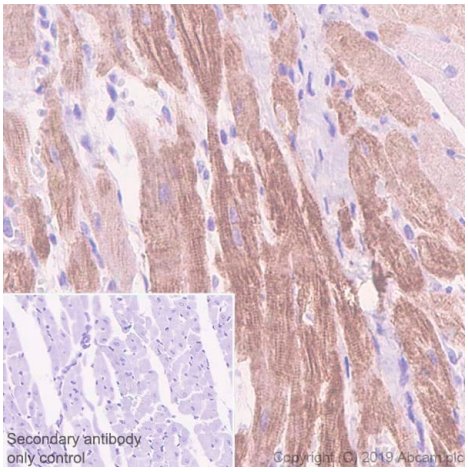



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**). **Negative** staining on the smooth muscle in the human spleen (PMID: 22530000). The section was incubated with ab234431 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

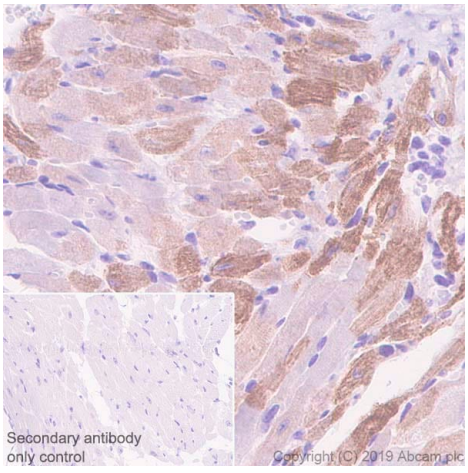



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of paraffin-embedded rat cardiac muscle tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**). Cytoplasmic staining on the rat cardiac muscle (PMID: 22530000). The section was incubated with ab234431 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of paraffin-embedded mouse cardiac muscle tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**). Cytoplasmic staining on the mouse cardiac muscle (PMID: 22530000). The section was incubated with ab234431 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**).

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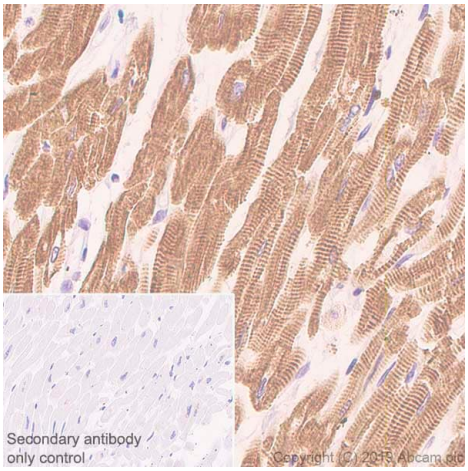


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)

Immunohistochemical analysis of paraffin-embedded human cardiac muscle tissue labeling Slow Skeletal Myosin Heavy chain using ab234431 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**). Cytoplasmic staining on the human cardiac muscle (PMID: 22530000). The section was incubated with ab234431 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.


Anti-Slow Skeletal Myosin Heavy chain antibody [EPR22697-17] (ab234431)



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