

## Product datasheet

# Anti-Ryanodine Receptor antibody [EPR21796] ab219798

Recombinant RabMAb

[2 References](#) [11 Images](#)

### Overview

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<b>Product name</b>	Anti-Ryanodine Receptor antibody [EPR21796]
<b>Description</b>	Rabbit monoclonal [EPR21796] to Ryanodine Receptor
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> ICC/IF, WB, IHC-P, IHC-Fr
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: Human skeletal muscle tissue lysate; mouse skeletal muscle tissue lysate; rat skeletal muscle tissue lysate. IHC-P: Mouse skeletal muscle and cerebellum tissue; rat skeletal muscle and cerebellum tissue. IHC-Fr: Mouse skeletal muscle and cerebellum tissue; rat skeletal muscle and cerebellum tissue. ICC/IF: C2C12 cells.
<b>General notes</b>	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"><li>- High batch-to-batch consistency and reproducibility</li><li>- Improved sensitivity and specificity</li><li>- Long-term security of supply</li><li>- Animal-free production</li></ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a>.</p>

### Properties

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<b>Form</b>	Liquid
<b>Storage instructions</b>	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.
<b>Storage buffer</b>	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
<b>Purity</b>	Protein A purified

<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR21796
<b>Isotype</b>	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab219798 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
ICC/IF		1/100.
WB		1/1000. Detects a band of approximately 565 kDa (predicted molecular weight: 565 kDa).
IHC-P		1/2000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. IHC is not recommended in human due to non-specific staining.
IHC-Fr		1/30. Perform heat-mediated antigen retrieval by using <b>ab94681</b> (Tris/EDTA buffer, pH9.0). IHC is not recommended in human due to non-specific staining.

## Target

<b>Function</b>	Calcium channel that mediates the release of Ca(2+) from the sarcoplasmic reticulum into the cytoplasm and thereby plays a key role in triggering muscle contraction following depolarization of T-tubules. Repeated very high-level exercise increases the open probability of the channel and leads to Ca(2+) leaking into the cytoplasm. Can also mediate the release of Ca(2+) from intracellular stores in neurons, and may thereby promote prolonged Ca(2+) signaling in the brain. Required for normal embryonic development of muscle fibers and skeletal muscle. Required for normal heart morphogenesis, skin development and ossification during embryogenesis.
<b>Tissue specificity</b>	Skeletal muscle and brain (cerebellum and hippocampus).
<b>Involvement in disease</b>	Malignant hyperthermia 1 Central core disease of muscle Multiminicore disease with external ophthalmoplegia Myopathy, congenital, with fiber-type disproportion Defects in RYR1 may be a cause of Samaritan myopathy, a congenital myopathy with benign course. Patients display severe hypotonia and respiratory distress at birth. Unlike other congenital myopathies, the health status constantly improves and patients are minimally affected at adulthood.
<b>Sequence similarities</b>	Belongs to the ryanodine receptor (TC 1.A.3.1) family. RYR1 subfamily. Contains 3 B30.2/SPRY domains. Contains 5 MIR domains.
<b>Domain</b>	The calcium release channel activity resides in the C-terminal region while the remaining part of

the protein constitutes the 'foot' structure spanning the junctional gap between the sarcoplasmic reticulum (SR) and the T-tubule.

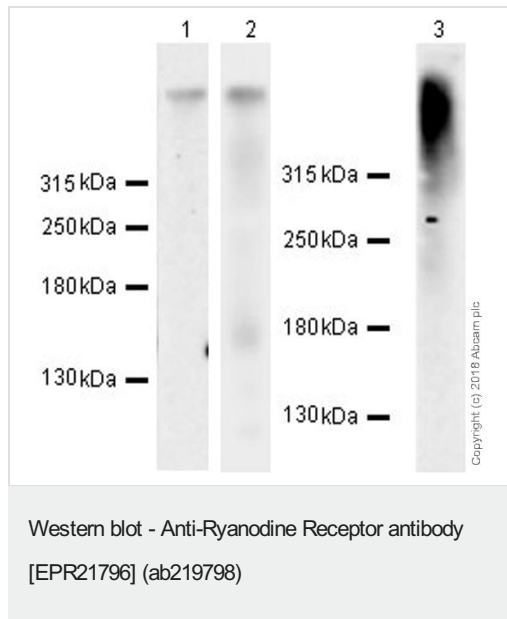
### Post-translational modifications

Channel activity is modulated by phosphorylation. Phosphorylation at Ser-2843 may increase channel activity. Repeated very high-level exercise increases phosphorylation at Ser-2843. Activated by reversible S-nitrosylation. Repeated very high-level exercise increases S-nitrosylation.

### Cellular localization

Sarcoplasmic reticulum membrane. Membrane. The number of predicted transmembrane domains varies between orthologs, but both N-terminus and C-terminus seem to be cytoplasmic.

## Images



**All lanes :** Anti-Ryanodine Receptor antibody [EPR21796] (ab219798) at 1/1000 dilution

**Lane 1 :** Human skeletal muscle tissue lysate at 20 µg

**Lane 2 :** Mouse skeletal muscle tissue lysate at 20 µg

**Lane 3 :** Rat skeletal muscle tissue lysate at 10 µg

### Secondary

**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

**Predicted band size:** 565 kDa

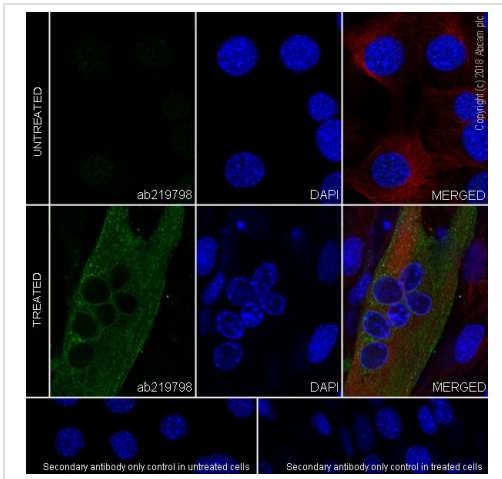
**Observed band size:** 565 kDa

Blocking and dilution buffer: 5% NFDm/TBST.

Exposure times.

Lanes 1 & 3: 3 minutes.

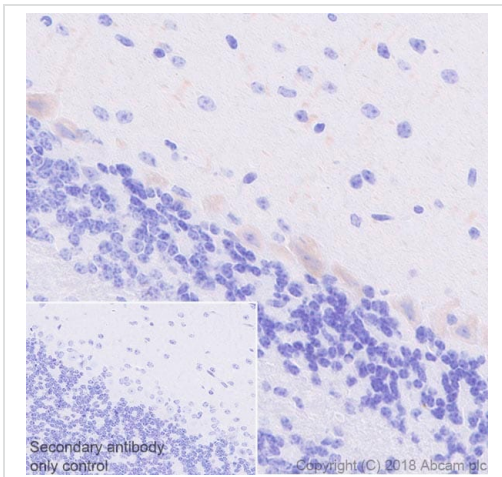
Lane 2: 15 seconds.



Immunocytochemistry/ Immunofluorescence - Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

Immunohistochemical analysis of C2C12 (mouse muscle myoblast) cells labeling Ryanodine Receptor (green) with ab219798 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (**ab150077**) at 1/1000 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% TritonX-100. Confocal image showing cytoplasmic staining in differentiated C2C12 cells. Confluent C2C12 cells were grown for 8 days to differentiate into myotube in a complete culture medium containing 10% FBS, following the ATCC protocol for myotube formation. The nuclear counter stain is DAPI (blue).

**ab195889**, Anti-Alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1/200 was used as counterstain.

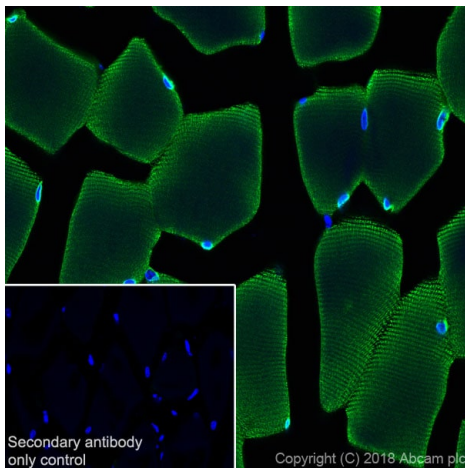


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

Immunohistochemical analysis of paraffin-embedded mouse cerebellum tissue labeling Ryanodine Receptor with ab219798 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining in Purkinje cells of mouse cerebellum (PMID 18313230) is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat-mediated antigen retrieval using **ab93684** (Tris/EDTA buffer, pH 9.0).

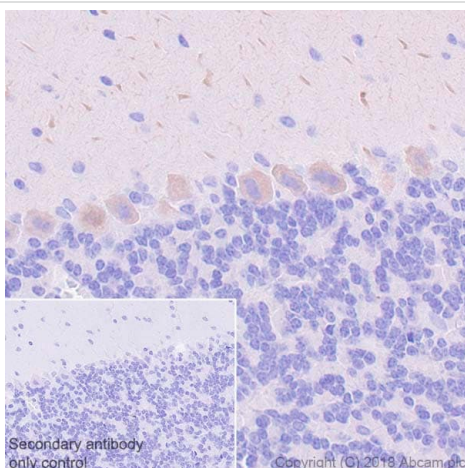


Immunohistochemistry (Frozen sections) - Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen sectioned mouse skeletal muscle tissue labeling Ryanodine Receptor (green) with ab219798 at 1/30 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor<sup>®</sup> 488) ([ab150077](#)) at 1/1000 dilution. Positive staining in mouse skeletal muscle cells (PMID: 21454501) is observed. The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor<sup>®</sup> 488) ([ab150077](#)) at 1/1000 dilution.

Perform heat-mediated antigen retrieval by using [ab94681](#) (Tris/EDTA buffer, pH9.0).



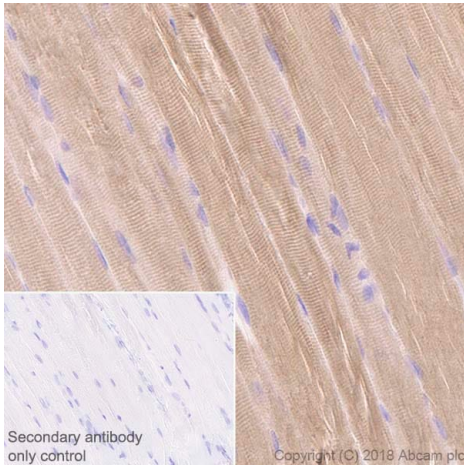
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

Immunohistochemical analysis of paraffin-embedded rat cerebellum tissue labeling Ryanodine Receptor with ab219798 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining in Purkinje cells of rat cerebellum (PMID 18313230) is observed. Counter stained with Hematoxylin.

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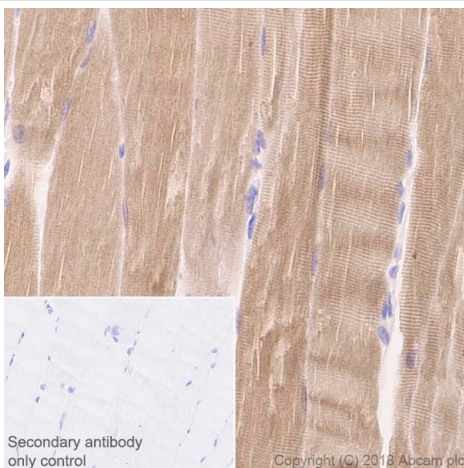


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

Immunohistochemical analysis of paraffin-embedded rat skeletal muscle tissue labeling Ryanodine Receptor with ab219798 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining in rat skeletal muscle (PMID: 26109061) is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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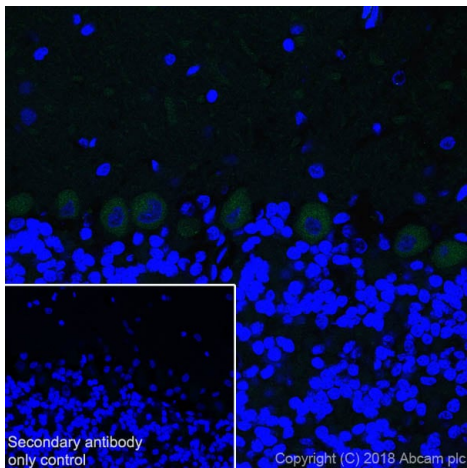


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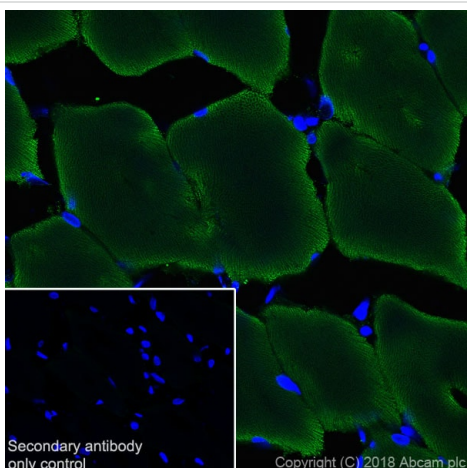


Immunohistochemistry (Frozen sections) - Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen sectioned rat cerebellum tissue labeling Ryanodine Receptor (green) with ab219798 at 1/30 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) ([ab150077](#)) at 1/1000 dilution. Positive cytoplasmic staining in Purkinje cells, negative staining in cells localized in granular layer and molecular layer of rat cerebellum tissue section (PMID: 18313230) is observed. The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) ([ab150077](#)) at 1/1000 dilution.

Perform heat-mediated antigen retrieval by using [ab94681](#) (Tris/EDTA buffer, pH9.0).

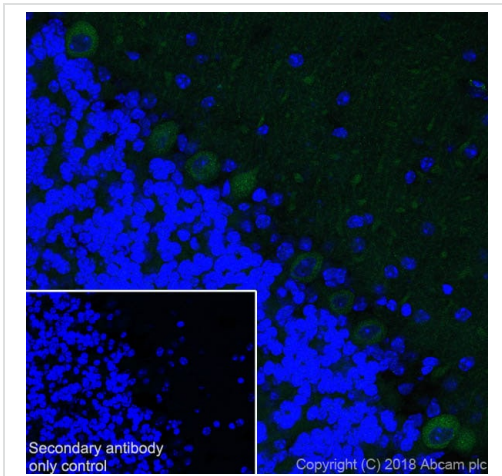


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Perform heat-mediated antigen retrieval by using **ab94681** (Tris/EDTA buffer, pH9.0).

Why choose a recombinant antibody?

 <p><b>Research with confidence</b> Consistent and reproducible results</p>	 <p><b>Long-term and scalable supply</b> Recombinant technology</p>
 <p><b>Success from the first experiment</b> Confirmed specificity</p>	 <p><b>Ethical standards compliant</b> Animal-free production</p>

Anti-Ryanodine Receptor antibody [EPR21796] (ab219798)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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