

## Product datasheet

# Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] ab302716

Recombinant RabMAb

14 Images

### Overview

<b>Product name</b>	Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70]
<b>Description</b>	Rabbit monoclonal [EPR26288-70] to Ryanodine receptor 2/RYR-2
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> IHC-P, IHC-Fr, IP, WB
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: Tissue lysates: Mouse and rat heart; HEK-293T transfected with human Ryanodine receptor 2 expression vector with a myc-His-tag®. IHC-P: Human: cardiac muscle, cerebrum tissues; Mouse and rat cardiac muscle tissues. IHC-Fr: Mouse and rat frozen heart (fresh). IP: Mouse heart tissue lysate.
<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® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb® patents</a>.</p>

### Properties

<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>	<p>pH: 7.2</p> <p>Preservative: 0.01% Sodium azide</p> <p>Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA</p>
<b>Purity</b>	Protein A purified

<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR26288-70
<b>Isotype</b>	IgG

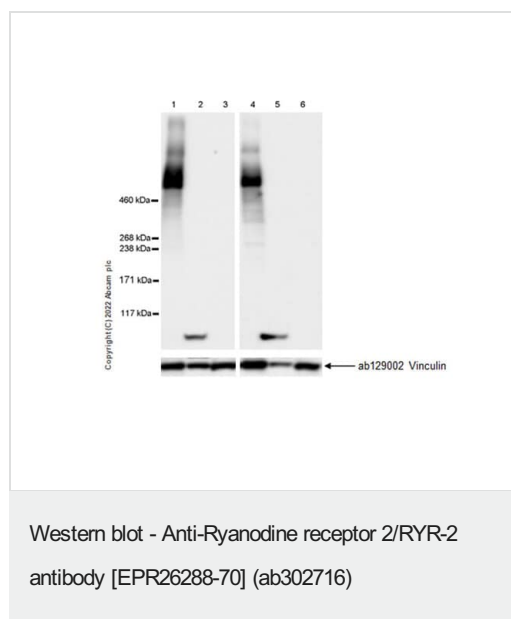
## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab302716 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
IHC-P		1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
IHC-Fr		1/100.
IP		1/30.
WB		1/1000. Detects a band of approximately 564 kDa (predicted molecular weight: 565 kDa).

## 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 cardiac muscle contraction. Aberrant channel activation can lead to cardiac arrhythmia. In cardiac myocytes, calcium release is triggered by increased Ca(2+) levels due to activation of the L-type calcium channel CACNA1C. The calcium channel activity is modulated by formation of heterotetramers with RYR3. Required for cellular calcium ion homeostasis. Required for embryonic heart development.
<b>Tissue specificity</b>	Detected in heart muscle (at protein level). Heart muscle, brain (cerebellum and hippocampus) and placenta.
<b>Involvement in disease</b>	Familial arrhythmogenic right ventricular dysplasia 2 Ventricular tachycardia, catecholaminergic polymorphic 1, with or without atrial dysfunction and/or dilated cardiomyopathy
<b>Sequence similarities</b>	Belongs to the ryanodine receptor (TC 1.A.3.1) family. RYR2 subfamily. Contains 3 B30.2/SPRY domains. Contains 5 MIR domains.
<b>Developmental stage</b>	Expressed in myometrium during pregnancy.
<b>Domain</b>	The calcium release channel activity resides in the C-terminal region while the remaining part of the protein resides in the cytoplasm.
<b>Post-translational modifications</b>	Channel activity is modulated by phosphorylation. Phosphorylation at Ser-2808 and Ser-2814 increases the open probability of the calcium channel. Phosphorylation is increased in failing heart, leading to calcium leaks and increased cytoplasmic Ca(2+) levels. Phosphorylation at Ser-2031 by PKA enhances the response to luminal calcium.
<b>Cellular localization</b>	Sarcoplasmic reticulum membrane. Membrane. The number of predicted transmembrane domains varies between orthologs, but both N-terminus and C-terminus seem to be cytoplasmic.



**All lanes** : Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716) at 1/1000 dilution

**Lane 1** : Mouse heart tissue lysate

**Lane 2** : Mouse skeletal muscle tissue lysate

**Lane 3** : Mouse liver tissue lysate

**Lane 4** : Rat heart tissue lysate

**Lane 5** : Rat skeletal muscle tissue lysate

**Lane 6** : Rat liver tissue lysate

Lysates/proteins at 20 µg per lane.

### Secondary

**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

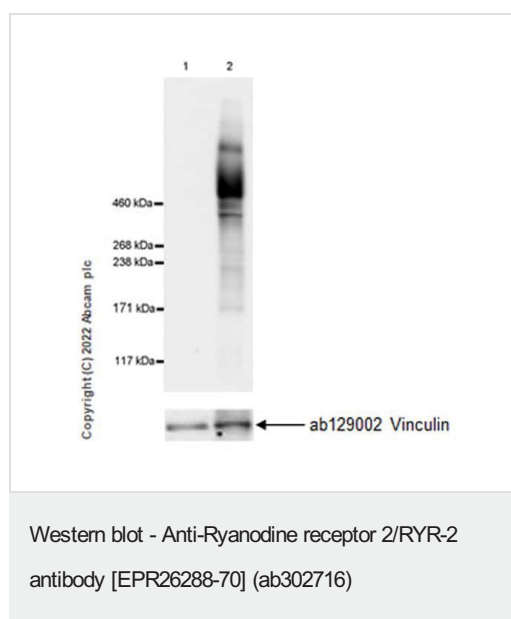
**Predicted band size:** 565 kDa

**Observed band size:** 564 kDa

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Negative controls: skeletal muscle, liver (PMID:23516528, PMID: 9607712)

Exposure time: Lanes 1-3: 15 seconds; Lanes 4-6: 37 seconds.



**All lanes** : Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716) at 1/1000 dilution

**Lane 1** : HEK-293T (human embryonic kidney) transfected with an empty vector (vector control), containing a myc-His-tag®, whole cell lysate

**Lane 2** : HEK-293T transfected with human Ryanodine receptor 2 expression vector containing a myc-His-tag®, whole cell lysate

Lysates/proteins at 20 µg per lane.

### Secondary

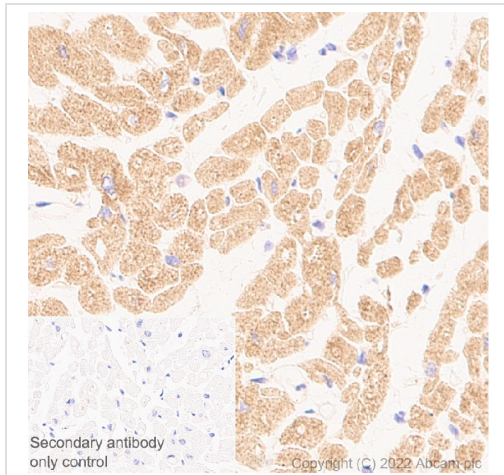
**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

**Predicted band size:** 565 kDa

**Observed band size:** 564 kDa

**Exposure time:** 3 seconds

Blocking and dilution buffer and concentration: 5% NFDM/TBST.



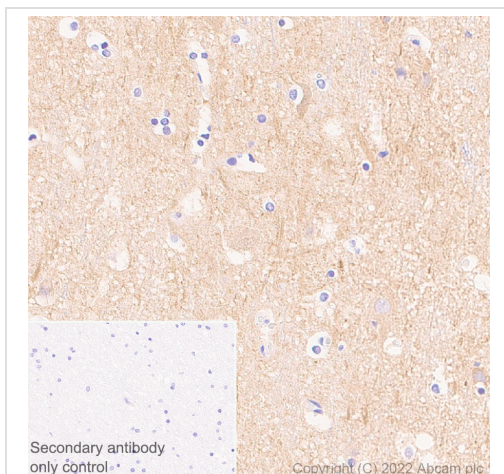
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of paraffin-embedded human cardiac muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 dilution (1.068 µg/ml), followed by a ready to use Leica DS9800 (Bond™ Polymer Refine Detection).

Cytoplasmic staining on human cardiac muscle is observed (PMID: 27987400). The section was incubated with ab302716 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) kit.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

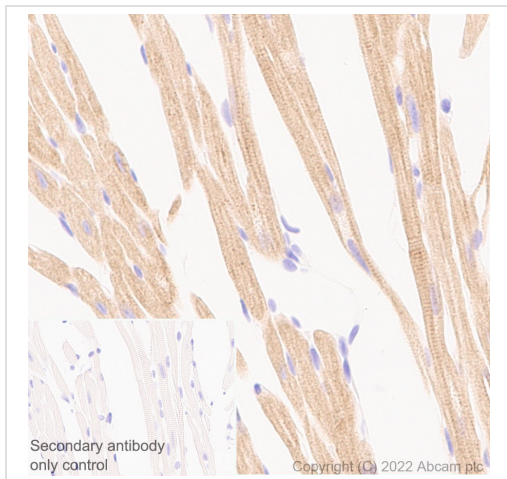
Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 dilution (1.068 µg/ml), followed by a ready to use Leica DS9800 (Bond™ Polymer Refine Detection).

Cytoplasmic staining on human cerebrum is observed. The section was incubated with ab302716 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) kit.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.

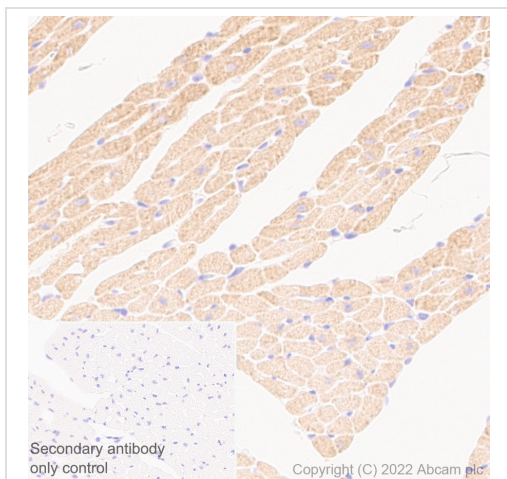


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of paraffin-embedded mouse cardiac muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/2000 dilution (0.267 µg/ml), followed by a ready to use Leica DS9800 (Bond™ Polymer Refine Detection). Cytoplasmic staining on mouse cardiac muscle is observed. The section was incubated with ab302716 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) kit.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.



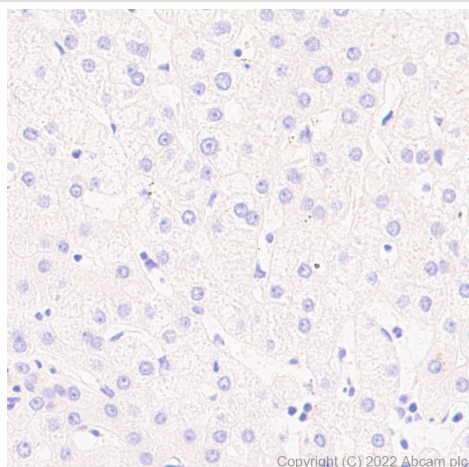
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of paraffin-embedded rat cardiac muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/2000 dilution (0.267 µg/ml), followed by a ready to use Leica DS9800 (Bond™ Polymer Refine Detection). Cytoplasmic staining on rat cardiac muscle (PMID: 27882143). The section was incubated with ab302716 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) kit.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.



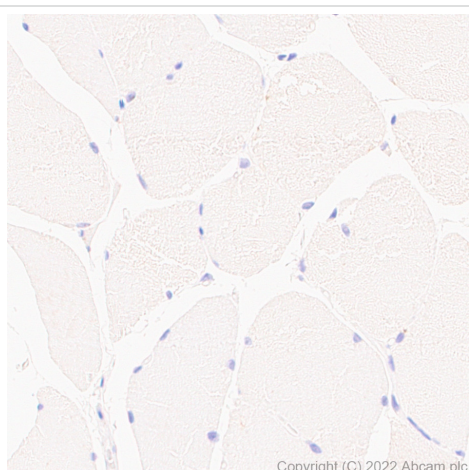


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of paraffin-embedded human liver tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 dilution (1.068 µg/ml), followed by a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) was used. Negative control: no staining on human liver is observed. The section was incubated with ab302716 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) kit.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.

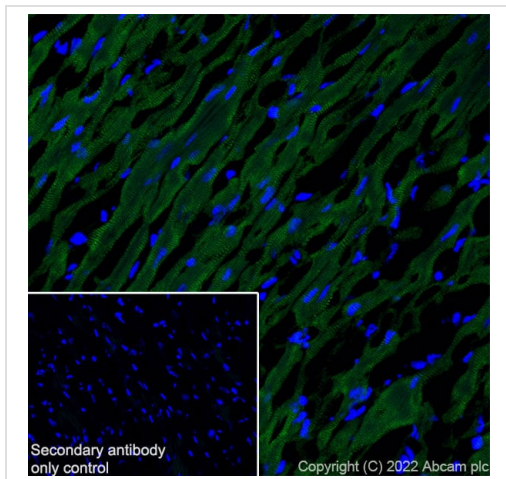


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 dilution (1.068 µg/ml), followed by a ready to use Leica DS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on human skeletal muscle is observed. The section was incubated with ab302716 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Leica DS9800 (Bond™ Polymer Refine Detection) kit.

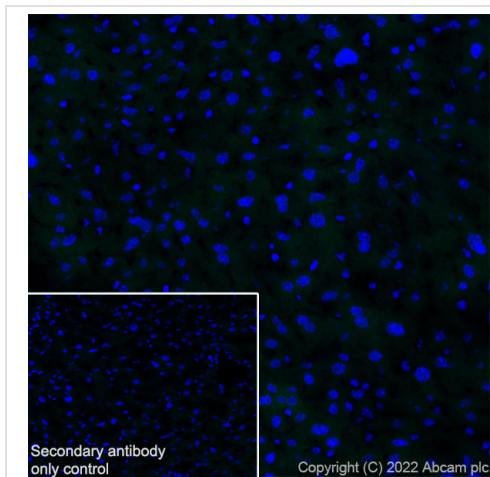
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins was used.



Immunohistochemistry (Frozen sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen mouse heart (fresh) tissue labeling Ryanodine receptor 2/RYR-2 with AB302716 at 1/100 dilution (5.34 µg/mL), followed by **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL) (Green). Positive staining on mouse heart is observed. The nuclear counterstain was DAPI (Blue).

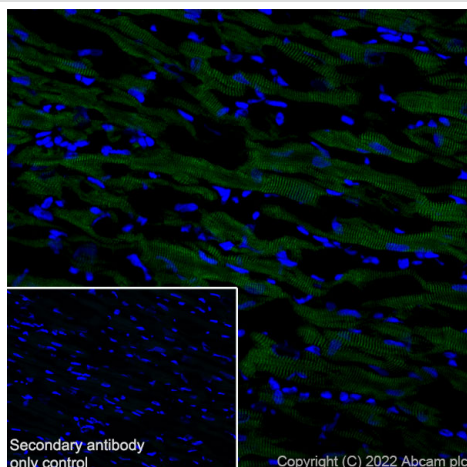
Secondary antibody control: Secondary antibody is **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL).



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Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen mouse liver (fresh) tissue labeling Ryanodine receptor 2/RYR-2 with AB302716 at 1/100 dilution (5.34 µg/mL), followed by **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL) (Green). Negative control: no staining on mouse liver is observed (PMID: 12395283). The nuclear counterstain was DAPI (Blue).

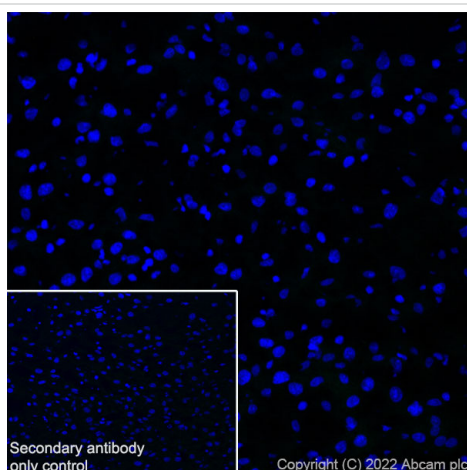
Secondary antibody control: Secondary antibody is **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL).



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Secondary antibody control: Secondary antibody is **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL).

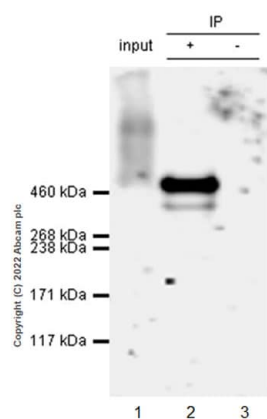


Immunohistochemistry (Frozen sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen rat liver (fresh) tissue labeling Ryanodine receptor 2/RYR-2 with AB302716 at 1/100 dilution (5.34 µg/mL), followed by **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL) (Green). Negative control: no staining on rat liver (PMID: 12395283) is observed. The nuclear counterstain was DAPI (Blue).

Secondary antibody control: Secondary antibody is **ab150081** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 µg/mL).





Immunoprecipitation - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Ryanodine receptor 2/RYR-2 was immunoprecipitated from 0.35 mg mouse heart tissue lysate with ab302716 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab302716 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) ([ab131366](#)) was used at 1/5000 dilution.

**Lane 1:** mouse heart tissue lysate 10 µg (Inset)

**Lane 2:** ab302716 IP in mouse heart tissue lysate

**Lane 3:** Rabbit monoclonal IgG ([ab172730](#)) instead of ab302716 in mouse heart tissue lysate

Blocking and dilution buffer and concentration: 5% NFDm/TBST.

Exposure time: 3 minutes.

Observed  $M_w$  (kDa): 564.

#### Why choose a recombinant antibody?



**Research with confidence**  
Consistent and reproducible results



**Long-term and scalable supply**  
Recombinant technology



**Success from the first experiment**  
Confirmed specificity



**Ethical standards compliant**  
Animal-free production

Anti-Ryanodine receptor 2/RYR-2 antibody  
[EPR26288-70] (ab302716)

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

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- Replacement or refund for products not performing as stated on the datasheet
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- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

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