abcam

ab302716

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

Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716) is a rabbit monoclonal antibody detecting Ryanodine receptor 2/RYR-2 in **Western Blot, IP, IHC-P, IHC-Fr**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26288-70
Purification technique	Affinity purification Protein A
Concentration	0.515 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse

Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

IHC-Fr

Tested

Species	Mouse
Dilution info	1/100

Notes	-

Species	Rat
Dilution info	1/100
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

Species	Rat, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information RYR2

Function	Cytosolic calcium-activated calcium channel that mediates the release of Ca(2+) from the sarcoplasmic reticulum into the cytosol 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+) cytosolic 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.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr) in Human, Mouse, Rat samples.

What is the molecular weight of Ryanodine receptor 2/RYR-2?
Anti-Ryanodine receptor 2/RYR-2 [EPR26288-70] (ab302716) specifically detects a band for Ryanodine receptor 2/RYR-2 (UniProt: Q92736) at a molecular weight of 565kDa.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 10µl. Discover our selection of trial-size antibodies.

Other related products
We have a range of other formats of antibody clone [EPR26288-70] also available for your convenience: ab302716, Carrier free - ab302717

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The ryanodine receptor 2 (RYR-2) also known as cardiac ryanodine receptor is an intracellular calcium release channel that plays an important role in cardiac muscle contraction. This large protein has a mass of about 564 kDa and is mainly expressed in cardiac muscle tissue. Mechanically RYR-2 regulates the release of calcium ions from the sarcoplasmic reticulum into the cytosol. This calcium release occurs through the calcium-induced calcium release mechanism which is important in excitation-contraction coupling in cardiac muscle cells.
Biological function summary	RYR-2 enables the heart muscle cells to contract and relax by supplying calcium ions necessary for muscle contraction. It is part of a larger complex that includes proteins such as FK506-binding protein 12.6 (FKBP12.6) and calsequestrin which help regulate its function. Proper function of this complex is necessary for maintaining the rhythmic contraction and relaxation cycles of the heart. Any disruptions in this function can lead to irregular heartbeats.
Pathways	RYR-2 is significant in cardiac calcium signaling pathways that involve calcium-induced calcium release. Through this pathway it works closely with L-type calcium channels like Cav1.2 which are responsible for the initial influx of calcium that activates RYR-2. This cooperation allows for the amplification of calcium signals needed for strong cardiac muscle contractions. Proper signaling in these pathways is necessary for maintenance of heart rhythm and contractile strength.
Associated diseases and disorders	RYR-2 mutations associate with several cardiac disorders including catecholaminergic polymorphic ventricular tachycardia (CPVT) and arrhythmogenic right ventricular dysplasia type 2 (ARVD2). These conditions involve irregular heartbeats often triggered by physical exercise or stress. The relationship between RYR-2 and these disorders connects through its dysfunction in calcium signaling regulation which impacts heart rhythm stability. The malfunctioning of RYR-2 also affects related proteins like FKBP12.6 contributing further to disrupted calcium homeostasis and arrhythmic events.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

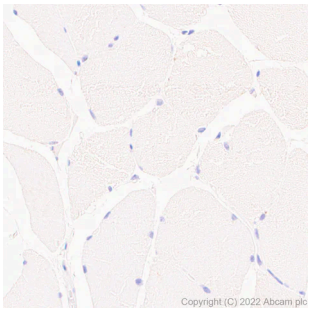
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

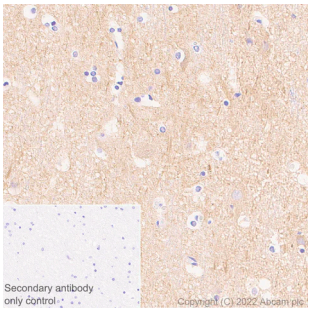
13 product images



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

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human skeletal muscle using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

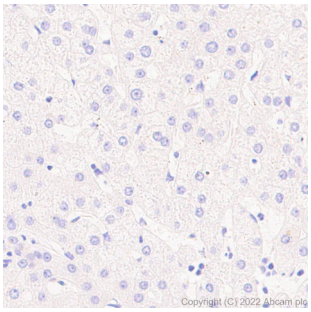
Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 (1.068 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Negative control: no staining on human skeletal muscle.The section 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 LeicaDS9800 (Bond☒ Polymer Refine Detection). 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-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

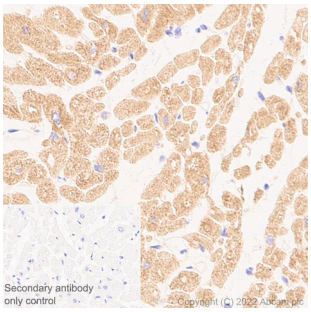
Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 (1.068 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Cytoplasmic staining on human cerebrum.The section was incubated with ab302716 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 LeicaDS9800 (Bond☒ Polymer Refine Detection). 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-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

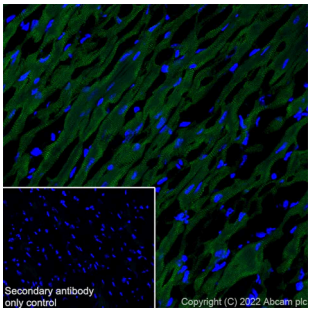
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 (1.068 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Negative control: no staining on human liver.The section was incubated with ab302716 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 LeicaDS9800 (Bond☒ Polymer Refine Detection). 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-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cardiac muscle using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

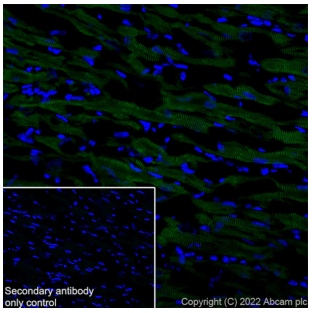
Immunohistochemical analysis of paraffin-embedded Human cardiac muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/500 (1.068 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Cytoplasmic staining on human cardiac muscle (PMID: 27987400).The section 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 LeicaDS9800 (Bond☒ Polymer Refine Detection). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



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

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Frozen sections) staining of Mouse heart (fresh) using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

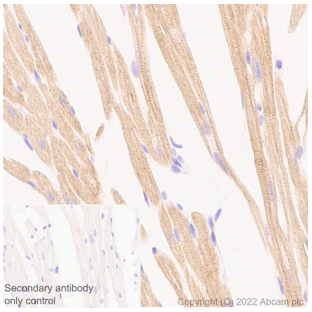
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse heart (fresh) tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/100 (5.34 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). 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 2 ug/mL dilution.



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

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Frozen sections) staining of Rat heart (fresh) using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

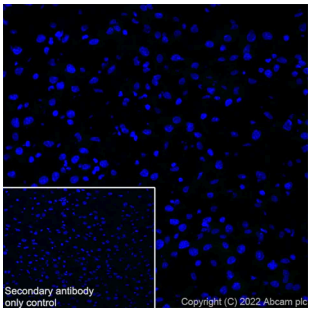
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat heart (fresh) tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/100 (5.34 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Positive staining on rat 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 2 ug/mL dilution.



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

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cardiac muscle using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

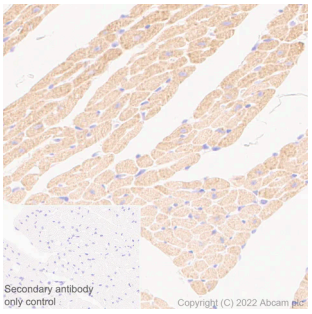
Immunohistochemical analysis of paraffin-embedded Mouse cardiac muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/2000 (0.267 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Cytoplasmic staining on mouse cardiac muscle.The section was incubated 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 LeicaDS9800 (Bond☒ Polymer Refine Detection). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



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

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Frozen sections) staining of Rat liver (fresh) using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

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 (5.34 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (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 2 ug/mL dilution.

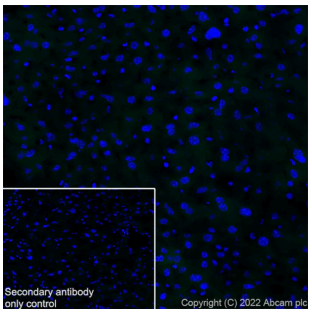


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716)

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cardiac muscle using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

Immunohistochemical analysis of paraffin-embedded Rat cardiac muscle tissue labeling Ryanodine receptor 2/RYR-2 with ab302716 at 1/2000 (0.267 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Cytoplasmic staining on rat cardiac muscle (PMID: 27882143).The section was incubated with ab302716 for 30 mins at room

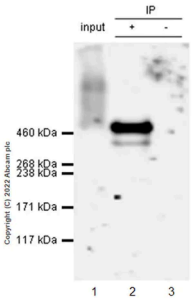
temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



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

Ryanodine receptor 2/RYR-2 Immunohistochemistry (Frozen sections) staining of Mouse liver (fresh) using rabbit Anti-Ryanodine receptor 2/RYR-2 antibody

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 (5.34 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Negative control: no staining on mouse 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 2 ug/mL dilution.



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 10 ug with ab302716 at 1/30 dilution (2ug 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 ug 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
All lanes:
Immunoprecipitation - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716) at 1/1000 dilution

Lane 1:
Mouse heart tissue lysate 10 ug

Lane 2:
ab302716 IP in Mouse heart tissue lysate

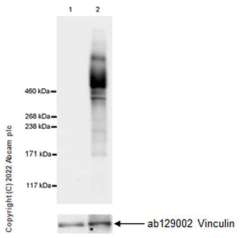
Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Predicted band size: 564 kDa

Observed band size: 564 kDa

Exposure time: 3min



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

Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 3 seconds
All lanes:
Western blot - 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 at 20 µg

Lane 2:
HEK-293T transfected with human Ryanodine receptor 2 expression vector containi a myc-His-tag®, whole cell lysate at 20 µg

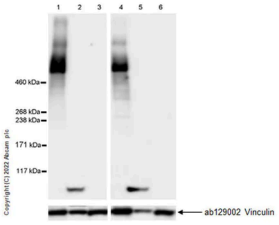
Secondary

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

Predicted band size: 565 kDa

Observed band size: 564 kDa

Exposure time: 3s



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

Blocking and diluting 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:
Western blot - Anti-Ryanodine receptor 2/RYR-2 antibody [EPR26288-70] (ab302716) at 1/1000 dilution

Lane 1:
Mouse heart tissue lysate at 20 µg

Lane 2:
Mouse skeletal muscle tissue lysate at 20 µg

Lane 3:
Mouse liver tissue lysate at 20 µg

Lane 4:
Rat heart tissue lysate at 20 µg

Lane 5:
Rat skeletal muscle tissue lysate at 20 µg

Lane 6:
Rat liver tissue lysate at 20 µg

Secondary

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

Predicted band size: 565 kDa

Observed band size: 564 kDa
