abcam

ab289544

Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker

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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1042
Purification technique	Affinity purification Protein A
Concentration	0.477 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	1/30
Notes	-

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	1/5000
Notes	-

Species	Human

Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.

Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information CAV3

Function	May act as a scaffolding protein within caveolar membranes. Interacts directly with G-protein alpha subunits and can functionally regulate their activity. May also regulate voltage-gated potassium channels. Plays a role in the sarcolemma repair mechanism of both skeletal muscle and cardiomyocytes that permits rapid resealing of membranes disrupted by mechanical stress (By similarity). Mediates the recruitment of CAVIN2 and CAVIN3 proteins to the caveolae (PubMed:19262564).

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 are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

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.

Supplementary info

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

Activity summary	Caveolin-3 also referred to as 'caveolin' 'caveolae' and 'CAV3' is a protein with an approximate mass of 17 kDa. It acts as a structural component of caveolae small invaginations in the plasma membrane. Caveolin-3 is expressed majorly in muscle cells including cardiac skeletal and smooth muscle tissues. As a distinguishing marker for caveolae it plays an essential role in the formation and stabilization of these structures.
Biological function summary	Caveolae perform vital functions in cellular signaling and endocytosis. Caveolin-3 assists in various signaling pathways within muscle cells and interacts with other caveolae markers to facilitate signal transduction. It often forms a complex with other caveolin proteins such as caveolin-1 creating an environment conducive for the embedding of signaling molecules. This protein also modulates the trafficking and function of certain ion channels and receptors impacting muscle physiology.
Pathways	Caveolin-3 significantly influences pathways concerned with muscle function and signal transduction. In particular it involves itself with the nitric oxide (NO) signaling pathway and beta-adrenergic signaling both critical to the contractile functions of muscle tissues. It closely interacts with proteins such as endothelial nitric oxide synthase (eNOS) and components of the G-protein coupled receptor family indicating its pivotal role in mediating physiological responses to stimuli.
Associated diseases and disorders	Caveolin-3 mutations have been associated with a range of muscle-related disorders including limb-girdle muscular dystrophy and hypertrophic cardiomyopathy. These conditions often arise due to alterations in muscle cell signaling and integrity. Caveolin-3 also shares connections with proteins like dystrophin an important player in maintaining muscle cell structure and its

dysfunction can exacerbate these muscular disorders. Understanding these interactions offers insights into potential therapeutic targets for managing related pathologies.

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

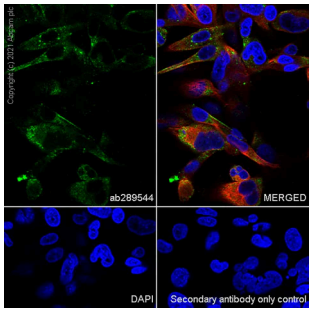
We do not recommend this combination. It is not covered by our product promise.

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.

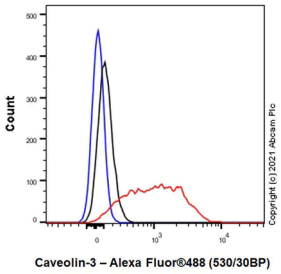
17 product images



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Caveolin-3 antibody

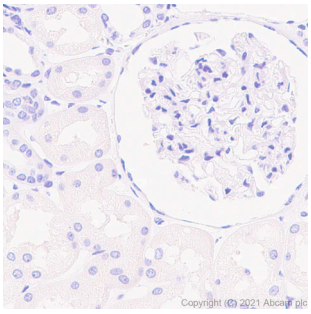
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized RD cells labelling Caveolin-3 with ab289544 at 1/100 (4.77 µg/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 µg/mL) dilution (Green). Confocal image showing cytoplasmic staining in RD cell line. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5 µg/ml) dilution (Red). The nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 µg/mL) dilution.



Flow Cytometry (Intracellular) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Flow Cytometry (Intracellular) staining using rabbit Anti-Caveolin-3 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 0.1% Tween-20 permeabilized RD (Human muscle spindle cells and large multinucleated cells) cells labelling Caveolin-3 with ab289544 at 1/50 dilution (1 µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).
Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



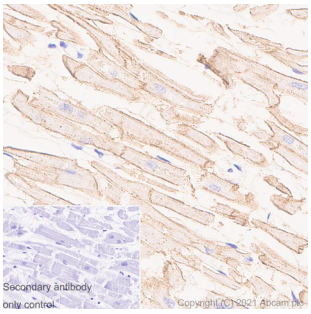
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of paraffin-embedded human kidney tissue labelling Caveolin-3 with ab289544 at 1/5000 (0.095 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The section was incubated with ab289544 for 10 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

Negative control: no staining on human kidney.

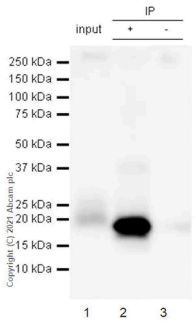


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of paraffin-embedded human cardiac muscle tissue labelling Caveolin-3 with ab289544 at 1/5000 (0.095 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Membranous staining on human cardiac muscle is observed. The section was incubated with ab289544 for 10 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Immunoprecipitation - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 was immunoprecipitated from 0.35 mg human heart lysate 10 µg with ab289544 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab289544 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: Human heart lysate 10 µg

Lane 2: ab289544 IP in human heart lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab289544 in human heart lysate

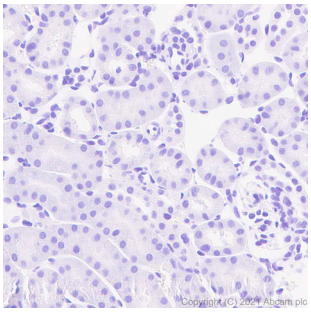
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds

All lanes:
Immunoprecipitation - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Predicted band size: 17 kDa

Observed band size: 17 kDa



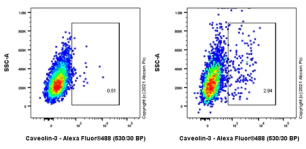
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of paraffin-embedded mouse kidney tissue labelling Caveolin-3 with ab289544 at 1/5000 (0.095 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The section was incubated with ab289544 for 10 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

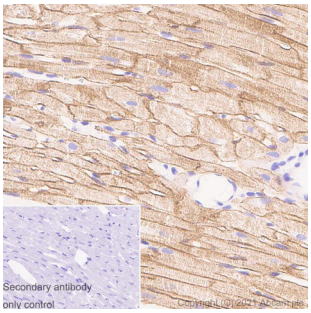
Negative control: no staining on mouse kidney.



Flow Cytometry (Intracellular) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Flow Cytometry (Intracellular) staining using rabbit Anti-Caveolin-3 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized C2C12 (Mouse myoblasts myoblast) differentiated to muscle for 7 days (Right) / Undifferentiated C2C12 cells (Left). Cells labelling Caveolin-3 with ab289544 at 1/500 dilution (0.1 µg)/ Left and Right. Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.

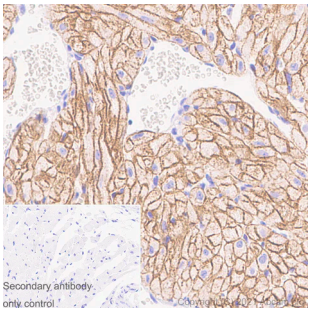


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of paraffin-embedded rat cardiac muscle tissue labelling Caveolin-3 with ab289544 at 1/5000 (0.095 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Membranous staining on rat cardiac muscle is observed. The section was incubated with ab289544 for 10 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

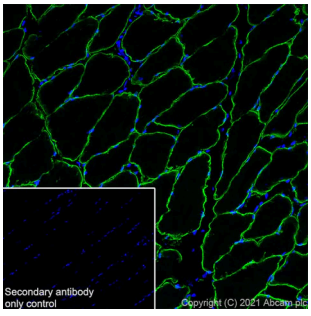


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of paraffin-embedded mouse cardiac muscle tissue labelling Caveolin-3 with ab289544 at 1/5000 (0.095 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Membranous staining on mouse cardiac muscle is observed. The section was incubated with ab289544 for 10 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

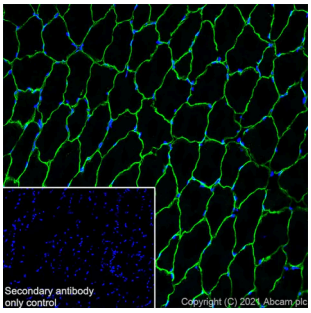
Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Immunohistochemistry (Frozen sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Frozen sections) staining using rabbit Anti-Caveolin-3 antibody

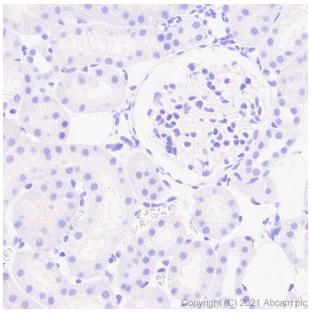
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen rat skeletal muscle (fresh) tissue labeling Caveolin-3 with ab289544 at 1/1000 (0.956 µg/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 µg/mL) dilution (Green). Positive staining on rat skeletal muscle is observed. The nuclear counterstain was DAPI (Blue).
Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 (2 µg/mL) dilution.



Immunohistochemistry (Frozen sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Frozen sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen mouse skeletal muscle (fresh) tissue labeling Caveolin-3 with ab289544 at 1/1000 (0.956 µg/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 µg/mL) dilution (Green). Positive staining on mouse skeletal muscle is observed. The nuclear counterstain was DAPI (Blue).
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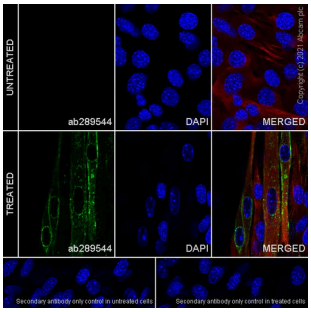
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-3 antibody

Immunohistochemical analysis of paraffin-embedded rat kidney tissue labelling Caveolin-3 with ab289544 at 1/5000 (0.095 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The section was incubated with ab289544 for 10 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

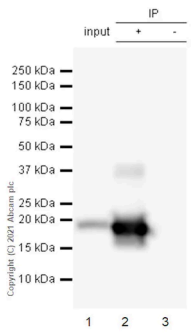
Negative control: no staining on rat kidney.



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Caveolin-3 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized C2C12 cells labelling Caveolin-3 with ab289544 at 1/100 (4.77 µg/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 µg/mL) dilution (Green). Confocal image showing cytoplasmic and membranous staining in differentiated C2C12 cells. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5 µg/ml) dilution (Red). The nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 µg/mL) dilution.



Immunoprecipitation - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 was immunoprecipitated from 0.35 mg mouse heart lysate 10 µg with ab289544 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab289544 at 1/2000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/10000 dilution.
Lane 1: Mouse heart lysate 10 µg

Lane 2: ab289544 IP in mouse heart lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab289544 in mouse heart lysate

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

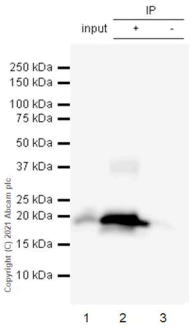
Exposure time: 8 seconds

Dimerized Caveolin-3 was observed at around 34kDa. (PMID: 21362625)

All lanes:
Immunoprecipitation - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Predicted band size: 17 kDa

Observed band size: 17 kDa



Immunoprecipitation - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 was immunoprecipitated from 0.35 mg rat heart lysate 10 µg with ab289544 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab289544 at 1/2000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/10000 dilution.
Lane 1: Rat heart lysate 10 µg

Lane 2: ab289544 IP in rat heart lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab289544 in rat heart lysate

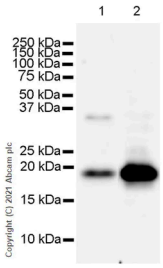
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 8 seconds

Dimerized Caveolin-3 was observed at around 34kDa. (PMID: 21362625)

All lanes:
Immunoprecipitation - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Predicted band size: 17 kDa



Western blot - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Western blot staining using rabbit Anti-Caveolin-3 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Dimerized Caveolin-3 was observed at around 34kDa. (PMID: 21362625)

Exposure time: 100 seconds

All lanes:
Western blot - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544) at 1/1000 dilution

Lane 1:
RD (Human muscle spindle cells and large multinucleated cells) whole cell lysate at 20 µg

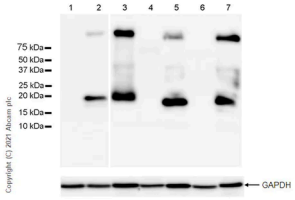
Lane 2:
Human skeletal muscle lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/10000 dilution

Predicted band size: 17 kDa

Observed band size: 17 kDa



Western blot - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544)

Caveolin-3 Western blot staining using rabbit Anti-Caveolin-3 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Negative control: Kidney (PMID: 8567687).

Higher molecular bands could be sumoylated Caveolin-3. (PMID: 21362625)

Exposure time: 15 seconds.

All lanes:
Western blot - Anti-Caveolin-3 antibody [RM1042] - Caveolae Marker (ab289544) at 1/1000 dilution

Lane 1:
C2C12 (Mouse myoblasts myoblast) whole cell lysate at 20 µg

Lane 2:
C2C12 differentiated to muscle for 7 days whole cell lysate at 20 µg

Lane 3:
Human heart lysate at 20 µg

Lane 4:
Human kidney lysate at 20 µg

Lane 5:
Mouse heart lysate at 20 µg

Lane 6:
Mouse kidney lysate at 20 µg

Lane 7:
Rat heart lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/5000 dilution

Predicted band size: 17 kDa

Observed band size: 17 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.