



Product datasheet

Anti-Caveolin-3 antibody - Caveolae Marker ab2912

★★★★☆ 11 Abreviews 56 References 11 Images

Overview

Product name	Anti-Caveolin-3 antibody - Caveolae Marker
Description	Rabbit polyclonal to Caveolin-3 - Caveolae Marker
Host species	Rabbit
Specificity	This antibody does not detect caveolin-1 or -2.
Tested applications	Suitable for: IHC-P, ICC/IF, ICC, IHC-Fr, Flow Cyt, WB, IP
Species reactivity	Reacts with: Mouse, Rat, Sheep, Human
Immunogen	Synthetic peptide corresponding to Mouse Caveolin-3 aa 1-19. Sequence: MMTEEHTDLEARIIKDIHC (Peptide available as ab4930)
	 Run BLAST with  Run BLAST with
Positive control	WB: Rat heart and skeletal muscle; Mouse heart and skeletal muscle; L6 cell lysate. ICC: C2C11 and HeLa cells. IHC-P: Mouse lymph node, heart and skeletal muscle tissues. IP: Mouse heart tissue lysate. Flow Cyt: U-87 MG cells.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

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	Preservative: 0.05% Sodium azide Constituents: 0.1% BSA, 99% PBS
Purity	Immunogen affinity purified

Purification notes	Antigen affinity chromatography.
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our [Abpromise guarantee](#) covers the use of ab2912 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)	1/100 - 1/200.
ICC/IF		Use at an assay dependent concentration.
ICC		1/20.
IHC-Fr	★★★★★ (2)	Use at an assay dependent concentration. PubMed: 21408028
Flow Cyt		Use 3-5µg for 10 ⁶ cells.
WB	★★★★★ (8)	Use a concentration of 1 - 3 µg/ml. Can be blocked with Mouse Caveolin-3 peptide (ab4930) .
IP		Use at an assay dependent concentration.

Target

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.

Tissue specificity Expressed predominantly in muscle.

Involvement in disease Defects in CAV3 are the cause of limb-girdle muscular dystrophy type 1C (LGMD1C) [MIM:607801]. LGMD1C is a myopathy characterized by calf hypertrophy and mild to moderate proximal muscle weakness. LGMD1C inheritance can be autosomal dominant or recessive. Defects in CAV3 are a cause of hyperCKmia (HYPCK) [MIM:123320]. It is a disease characterized by persistent elevated levels of serum creatine kinase without muscle weakness. Defects in CAV3 are a cause of rippling muscle disease (RMD) [MIM:606072]. RMD is a rare disorder characterized by mechanically triggered contractions of skeletal muscle. In RMD, mechanical stimulation leads to electrically silent muscle contractions that spread to neighboring fibers that cause visible ripples to move over the muscle. Defects in CAV3 are a cause of cardiomyopathy familial hypertrophic (CMH) [MIM:192600]; also designated FHC or HCM. 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 CAV3 are the cause of long QT syndrome type 9 (LQT9) [MIM:611818]. Long QT syndromes are heart disorders characterized by a prolonged QT interval on the ECG and polymorphic ventricular arrhythmias. They cause syncope and sudden death in response to exercise or emotional stress. They can present with a sentinel event of sudden cardiac death in infancy.

Defects in CAV3 can be a cause of sudden infant death syndrome (SIDS) [MIM:272120]. SIDS is the sudden death of an infant younger than 1 year that remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of clinical history. Pathophysiologic mechanisms for SIDS may include respiratory dysfunction, cardiac dysrhythmias, cardiorespiratory instability, and inborn errors of metabolism, but definitive pathogenic mechanisms precipitating an infant sudden death remain elusive. Long QT syndromes-associated mutations can be responsible for some SIDS cases.

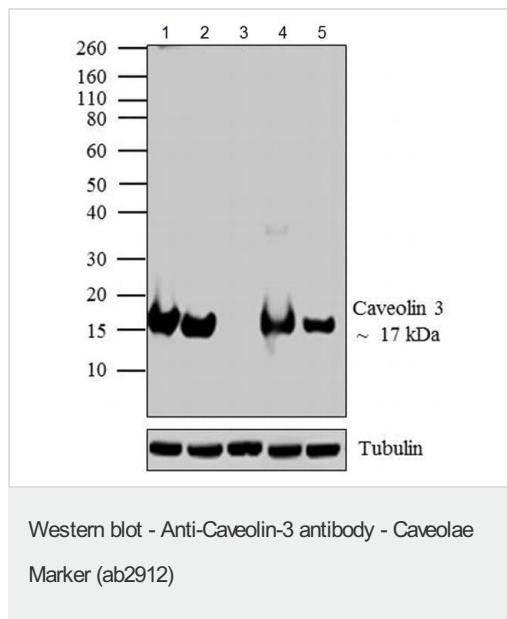
Sequence similarities

Belongs to the caveolin family.

Cellular localization

Golgi apparatus membrane. Cell membrane. Membrane > caveola. Potential hairpin-like structure in the membrane. Membrane protein of caveolae.

Images



All lanes : Anti-Caveolin-3 antibody - Caveolae Marker (ab2912)

Lane 1 : Rat heart tissue lysate

Lane 2 : Mouse heart tissue lysate

Lane 3 : HEK2993 cell lysate

Lane 4 : Rat skeletal muscle tissue lysate

Lane 5 : Mouse muscle tissue lysate

Lysates/proteins at 20 µg per lane.

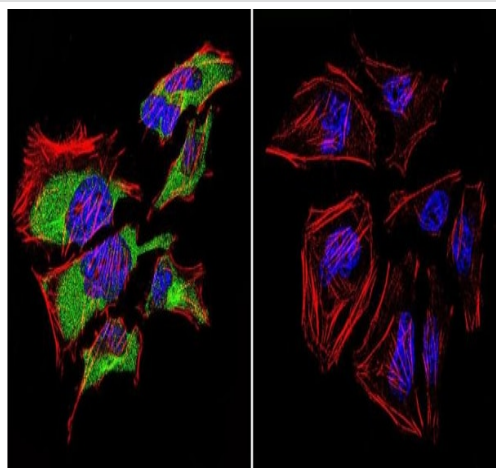
Secondary

All lanes : HRP-conjugated goat anti-rabbit IgG (H+L) at 1/2500 dilution

Developed using the ECL technique.

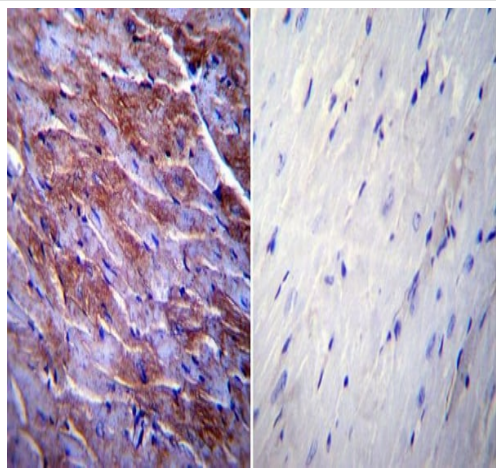
Observed band size: 17 kDa

Blocked with 5% skimmed milk.



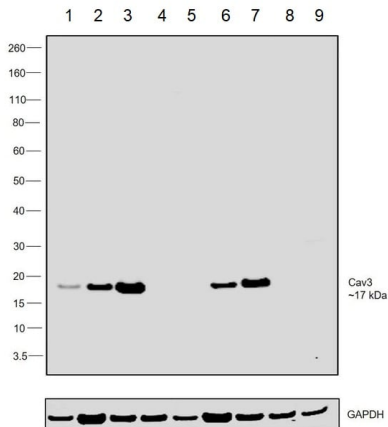
Immunocytochemistry - Anti-Caveolin-3 antibody -
Caveolae Marker (ab2912)

Immunocytochemistry analysis of Caveolin-3 in HeLa Cells. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) (right panel) or with ab2912 at a dilution of 1/20 overnight at 4°C, washed with PBS and incubated with a DyLight-488 conjugated secondary antibody. Caveolin-3 staining (green), F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Images were taken at 60X magnification.



Immunohistochemistry (Formalin/PFA-fixed paraffin-
embedded sections) - Anti-Caveolin-3 antibody -
Caveolae Marker (ab2912)

Immunohistochemistry was performed on normal biopsies of deparaffinized mouse heart tissue. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1/200 with a rabbit polyclonal antibody recognizing Caveolin-3 ab2912 or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



Western blot - Anti-Caveolin-3 antibody - Caveolae Marker (ab2912)

All lanes : Anti-Caveolin-3 antibody - Caveolae Marker (ab2912) at 1/1000 dilution

Lane 1 : L6 (Rat skeletal muscle cell line) whole cell lysate

Lane 2 : Mouse skeletal muscle tissue lysate

Lane 3 : Mouse heart tissue lysate

Lane 4 : Mouse brain tissue lysate

Lane 5 : Mouse kidney tissue lysate

Lane 6 : Rat skeletal muscle tissue lysate

Lane 7 : Rat heart tissue lysate

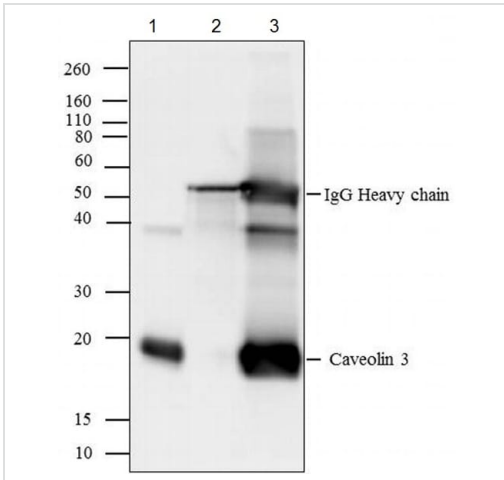
Lane 8 : Rat brain tissue lysate

Lane 9 : Rat kidney tissue lysate

Lysates/proteins at 30 µg per lane.

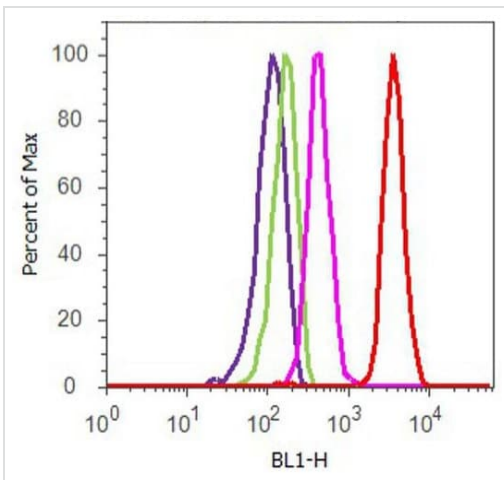
Observed band size: 17 kDa

Western blot was performed using ab2912 and a ~17 kDa band corresponding to Caveolin 3 was observed. Whole cell extracts (30 µg lysate) were electrophoresed using NuPAGE® 4-12 % Bis-Tris gel. Resolved proteins were then transferred onto a nitrocellulose membrane by iBlot® 2 Dry Blotting System. The blot was probed with the primary antibody (1:1000 dilution) and detected by chemiluminescence with Goat anti-Rabbit IgG (H+L) Superclonal™ Recombinant Secondary Antibody, HRP using the iBright FL 1000. Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit.



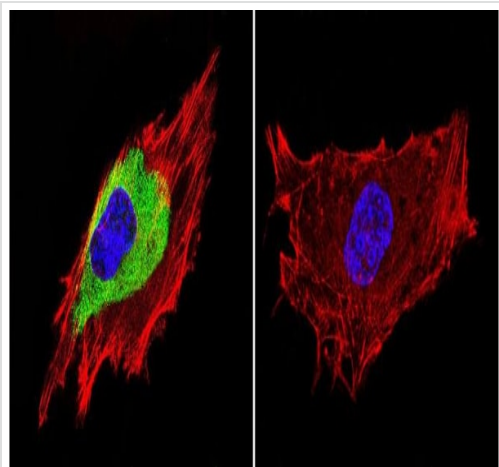
Immunoprecipitation - Anti-Caveolin-3 antibody -
Caveolae Marker (ab2912)

Caveolin-3 was immunoprecipitated using 5 µg of ab2912 from mouse heart tissue lysate (Lane 3) using the protein A beads. Normal rabbit IgG was used as an isotype control (Lane 2). 10% input represents the cell extract used for immunoprecipitation (Lane 1). Western blot analysis was performed using ab2912 and HRP-conjugated goat anti-rabbit IgG (H+L) at a dilution of 1/2500. Chemiluminescent detection was performed.



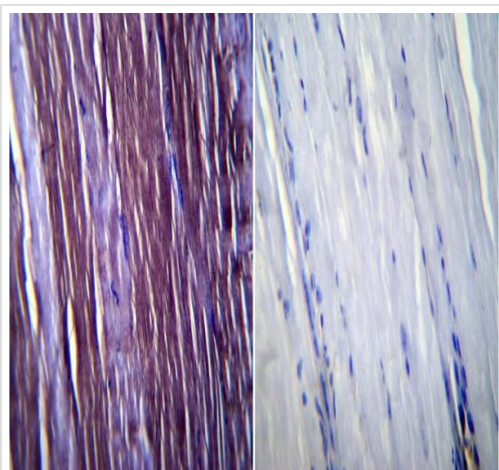
Flow Cytometry - Anti-Caveolin-3 antibody -
Caveolae Marker (ab2912)

Flow cytometry analysis of U-87 MG cells. Cells were fixed with 70% ethanol for 10 minutes, permeabilized with 0.25% Triton X-100 for 20 minutes, and blocked with 5% BSA for 30 minutes at room temperature. Cells were labeled with ab2912 (red histogram) or with rabbit isotype control (pink histogram) at 3-5 µg/million cells in 2.5% BSA. After incubation at room temperature for 2 hours, the cells were labeled with Alexa Fluor[®] 488-conjugated goat anti-rabbit secondary antibody at a dilution of 1/400 for 30 minutes at room temperature. The purple histogram represents unstained control cells and the green histogram represents no-primary-antibody control.



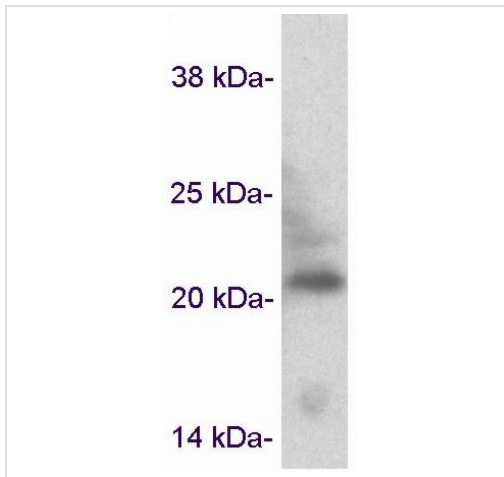
Immunocytochemistry - Anti-Caveolin-3 antibody -
Caveolae Marker (ab2912)

Immunocytochemistry analysis of Caveolin-3 in C2C11 Cells. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) (right panel) or with ab2912 at a dilution of 1/20 overnight at 4 C, washed with PBS and incubated with a DyLight-488 conjugated secondary antibody. Caveolin-3 staining (green), F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Images were taken at 60X magnification.



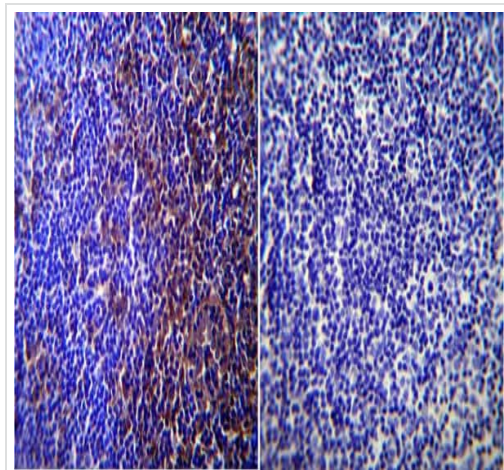
Immunohistochemistry (Formalin/PFA-fixed paraffin-
embedded sections) - Anti-Caveolin-3 antibody -
Caveolae Marker (ab2912)

Immunohistochemistry was performed on normal biopsies of deparaffinized Mouse skeletal muscle tissue. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1/100 with a rabbit polyclonal antibody recognizing Caveolin-3 ab2912 or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



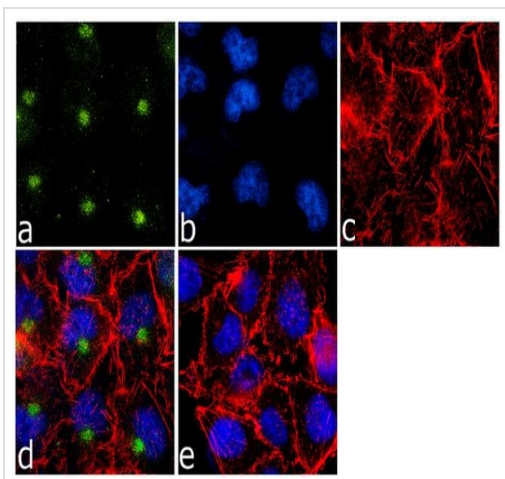
Western blot - Anti-Caveolin-3 antibody - Caveolae Marker (ab2912)

Anti-Caveolin-3 antibody - Caveolae Marker (ab2912) + Rat cardiac muscle tissue lysate



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-3 antibody - Caveolae Marker (ab2912)

Immunohistochemistry was performed on normal biopsies of deparaffinized mouse lymph node tissue. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1/200 with a rabbit polyclonal antibody recognizing Caveolin-3 ab2912 or without primary antibody (negative control) overnight at 4°C in a humidified chamber. Tissues were washed extensively with PBST and endogenous peroxidase activity was quenched with a peroxidase suppressor. Detection was performed using a biotin-conjugated secondary antibody and SA-HRP followed by colorimetric detection using DAB. Tissues were counterstained with hematoxylin and prepped for mounting.



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-3 antibody - Caveolae Marker (ab2912)

Immunocytochemistry/Immunofluorescence analysis of 70% confluent log phase A-375 cells. Cells were fixed with 4% paraformaldehyde for 15 minutes, permeabilized with 0.25% Triton X-100 for 10 minutes, and blocked with 5% BSA for 1 hour at room temperature. Samples were incubated with ab2912 at 1 µg/ml in 1% BSA for 3 hours at room temperature and then labelled with Alexa Fluor® 488-conjugated goat anti-rabbit IgG (H+L) at a dilution of 1/2000 for 45 minutes at room temperature (panel a: green). Nuclei (panel b: blue) were stained with DAPI. F-actin (panel c: red) was stained with Alexa Fluor® 555 Rhodamine Phalloidin (1/300). Panel d is a merged image showing cytoplasmic localization. Panel e is a no primary antibody control. The images were captured at 60X magnification.

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