abcam

Product datasheet

Anti-Caveolin-1 antibody [7C8] ab17052

KO VALIDATED

13 Abreviews 35 References 6 Images

Overview

Product name	Anti-Caveolin-1 antibody [7C8]
Description	Mouse monoclonal [7C8] to Caveolin-1
Host species	Mouse
Specificity	The monoclonal antibody 7C8 recognizes caveolin-1a as well as caveolin-1ß, which are present in many tissues, like aorta, heart, muscle, lung, adipose white, brown and epidydimal fat.
Tested applications	**Suitable for:** ICC/IF, WB **Unsuitable for:** Flow Cyt
Species reactivity	**Reacts with:** Rat, Human **Predicted to work with:** Mouse
Immunogen	Tissue, cells or virus corresponding to Rat Caveolin-1. GLUT4-containing vesicles immunoadsorbed from low density microsomes of rat adipocytes (Sprague Dawley). The antibody recognises epitope between residue 32 and the C-terminus.
Positive control	WB: A431, A549 and HUVEC cell lysates. ICC: HeLa 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. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 0.1% BSA
Purity	Protein G purified

Purification notes	0.2 µm filtered
Clonality	Monoclonal
Clone number	7C8
Isotype	IgG2b

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab17052 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	★★★★☆ (9)	Use at an assay dependent concentration.
WB	★★★★☆ (3)	Use at an assay dependent concentration. Detects a band of approximately 21, 19 kDa.

Application notes Is unsuitable for Flow Cyt.

Target

Function May act as a scaffolding protein within caveolar membranes. Interacts directly with G-protein alpha subunits and can functionally regulate their activity (By similarity). Involved in the costimulatory signal essential for T-cell receptor (TCR)-mediated T-cell activation. Its binding to DPP4 induces T-cell proliferation and NF-kappa-B activation in a T-cell receptor/CD3-dependent manner. Recruits CTNNB1 to caveolar membranes and may regulate CTNNB1-mediated signaling through the Wnt pathway.

Tissue specificity Expressed in muscle and lung, less so in liver, brain and kidney.

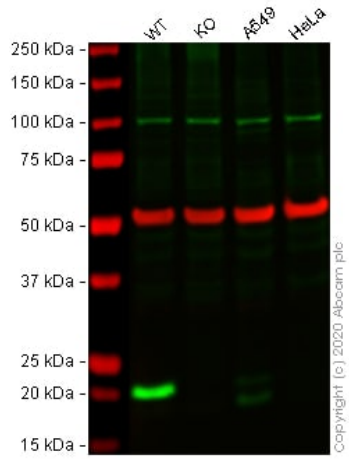
Involvement in disease Defects in CAV1 are the cause of congenital generalized lipodystrophy type 3 (CGL3) [MIM:612526]; also called Berardinelli-Seip congenital lipodystrophy type 3 (BSCL3). Congenital generalized lipodystrophies are autosomal recessive disorders characterized by a near absence of adipose tissue, extreme insulin resistance, hypertriglyceridemia, hepatic steatosis and early onset of diabetes.

Sequence similarities Belongs to the caveolin family.

Post-translational modifications The initiator methionine for isoform Beta is removed during or just after translation. The new N-terminal amino acid is then N-acetylated.

Cellular localization Golgi apparatus membrane. Cell membrane. Membrane > caveola. Membrane raft. Colocalized with DPP4 in membrane rafts. Potential hairpin-like structure in the membrane. Membrane protein of caveolae.

Images



Western blot - Anti-Caveolin-1 antibody [7C8] (ab17052)

All lanes : Anti-Caveolin-1 antibody [7C8] (ab17052) at 1 µg/ml

Lane 1 : Wild-type A-431 (Human epidermoid carcinoma cell line) whole cell lysate
Lane 2 : CAV1 knockout A-431 (Human epidermoid carcinoma cell line) whole cell lysate
Lane 3 : A549 (Human lung carcinoma cell line) whole cell lysate
Lane 4 : HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

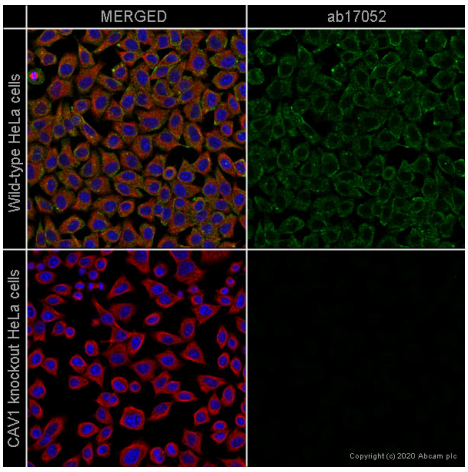
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Observed band size: 21-24 kDa

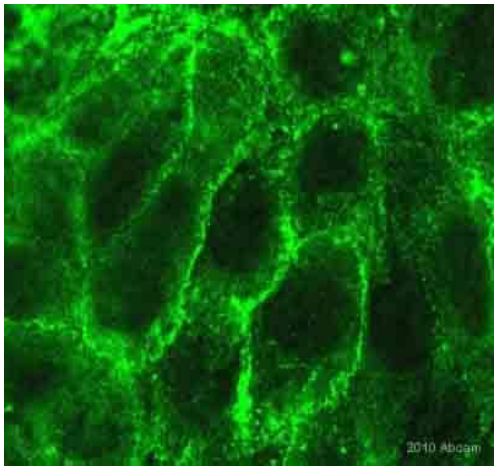
Lanes 1 - 4: Merged signal (red and green). Green - ab17052 observed at 21-24 kDa. Red - loading control, **ab52866** (Rabbit anti-alpha Tubulin antibody [EP1332Y]) observed at 55kDa.

ab17052 was shown to react with Caveolin-1 in wild-type A431 cells in western blot. Loss of signal was observed when CAV1 knockout sample was used. Wild-type and CAV1 knockout A431 cell lysates were subjected to SDS-PAGE. Membranes were blocked in non-mammalian (TBS-based) blocking solution before incubation with ab17052 and **ab52866** (Rabbit anti-alpha Tubulin antibody [EP1332Y]) overnight at 4°C at 1 µg/ml and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (**ab216772**) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (**ab216777**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-1 antibody [7C8] (ab17052)

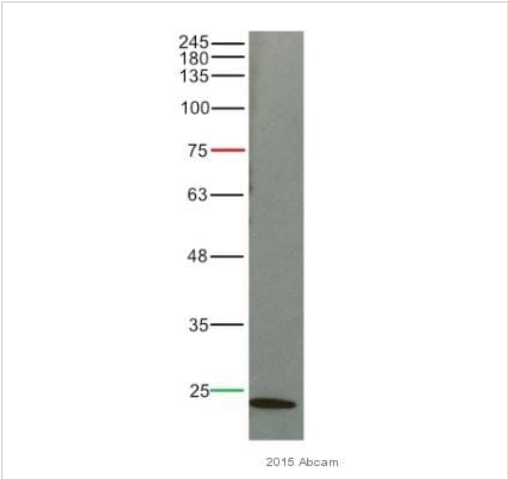
ab17052 staining Caveolin-1 in wild-type HeLa cells (top panel) and CAV1 knockout HeLa cells (**ab255371**) (bottom panel). The cells were fixed with 100% methanol (5 min) then permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab17052 at 1/500 dilution and **ab6046** (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (**ab150117**) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (**ab150080**) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-1 antibody [7C8] (ab17052)

This image is courtesy of an anonymous abreview.

ab17052 staining Caveolin-1 in human Hacat keratinocyte cells by Immunocytochemistry/ Immunofluorescence. The cells were formaldehyde fixed, permeabilised in 0.1% Triton X-100 and then blocked using 1% serum for 1 hour at 25°C. Samples were then incubated with primary antibody at 1/75 for 24 hours at 4°C. The secondary antibody used was conjugated to Alexa Fluor® 488 (green) used at a 1/500 dilution.



Western blot - Anti-Caveolin-1 antibody [7C8] (ab17052)

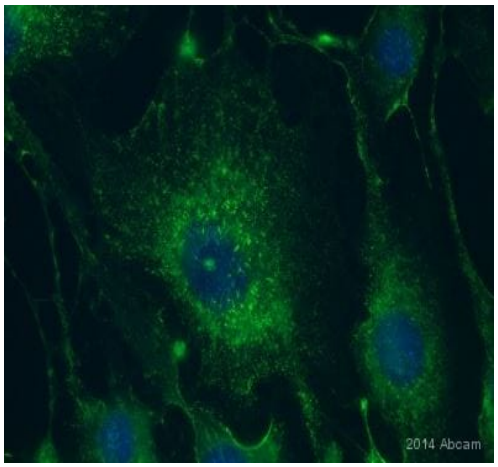
This image is courtesy of an anonymous Abreview.

Anti-Caveolin-1 antibody [7C8] (ab17052) at 1/500 dilution + HUVEC whole cell lysate at 20 µg

Developed using the ECL technique.

Performed under reducing conditions.

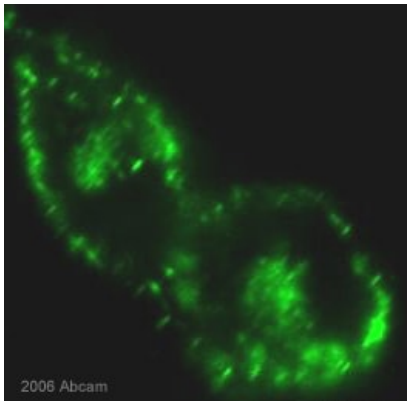
Exposure time: 10 seconds



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-1 antibody [7C8] (ab17052)

This image is courtesy of an anonymous Abreview.

Immunocytochemical analysis of Mouse Bend.3 cells, labeling Caveolin-1 with ab17052. Cells were paraformaldehyde fixed, permeabilized with PBS + 0.1% Triton (PBT), and blocked with 10% serum for 1 hour at 22°C. Staining with ab17052 (diluted 1/200) was for 16 hours at 4°C.



Immunocytochemistry/ Immunofluorescence - Anti-Caveolin-1 antibody [7C8] (ab17052)

This image is courtesy of an anonymous Abreview

ab17052 at a 1/500 dilution staining hamster CHO cells by ICC/IF. The cells were paraformaldehyde fixed and blocked with 10% serum prior to incubation with the antibody. Bound antibody was detected using a FITC conjugated goat anti-mouse antibody.

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