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Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7)

Catalog # ABO14835

Specification

Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) - Product Information

Application	**WB, IHC, IHC-F, IF**
Primary Accession	Q03135
Host	**Mouse**
Isotype	**Mouse IgG2a**
Reactivity	**Human**
Clonality	**Monoclonal**
Format	**Lyophilized**

Description
Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) . Tested in IF, IHC, IHC-F, WB applications. This antibody reacts with Human.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500 µg/ml.

Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) - Additional Information

Gene ID 857

Other Names
Caveolin-1, CAV1, CAV

Calculated MW
22 kDa KDa

Application Details
Western blot, 0.1-0.5 µg/ml
 Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml
 Immunohistochemistry (Frozen Section), 0.5-1 µg/ml
 Immunofluorescence, 2 µg/ml

Subcellular Localization
Cell membrane. Peripheral membrane protein. Golgi apparatus membrane. Peripheral membrane protein. Trans-Golgi network. Caveola. Peripheral membrane protein. Membrane raft.

Tissue Specificity
Skeletal muscle, liver, stomach, lung, kidney and heart (at protein level). Expressed in the brain.

Contents
Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
E.coli-derived human Caveolin-1 recombinant protein (Position: G4-I178). Human Caveolin-1 shares 95% and 94% amino acid (aa) sequence identity with mouse and rat Caveolin-1, respectively.

Cross Reactivity
No cross-reactivity with other proteins.

Storage	**Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.**

Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) - Protein Information

Name CAV1

Synonyms CAV

Function
May act as a scaffolding protein within caveolar membranes (PubMed:11751885). Forms a stable heterooligomeric complex with CAV2 that targets to lipid rafts and drives caveolae formation. Mediates the recruitment of CAVIN proteins (CAVIN1/2/3/4) to the caveolae (PubMed:19262564). 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 (PubMed:17287217). Recruits CTNNB1 to caveolar membranes and may regulate CTNNB1-mediated signaling through the Wnt pathway (By similarity). Negatively regulates TGFB1-mediated activation of SMAD2/3 by mediating the internalization of TGFBR1 from membrane rafts leading to its subsequent degradation (PubMed:25893292). Binds 20(S)-hydroxycholesterol (20(S)-OHC) (By similarity).

Cellular Location
Golgi apparatus membrane; Peripheral membrane protein. Cell membrane; Peripheral membrane protein. Membrane, caveola; Peripheral membrane protein. Membrane raft. Golgi apparatus, trans-Golgi network {ECO:0000250|UniProtKB:P33724} Note=Colocalized with DPP4 in membrane rafts. Potential hairpin-like structure in the membrane. Membrane protein of caveolae

Tissue Location
Skeletal muscle, liver, stomach, lung, kidney and heart (at protein level). Expressed in the brain

Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) - Images

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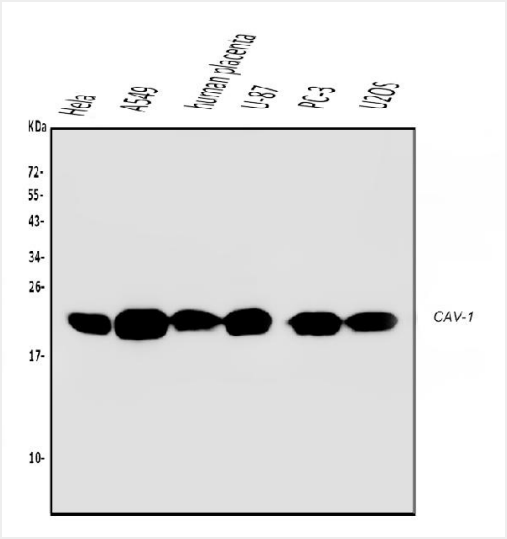

Figure 1. Western blot analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human Hela whole cell lysates;
Lane 2: human A549 whole cell lysates;
Lane 3: human placenta tissue lysates;
Lane 4: human U-87 whole cell lysates;
Lane 5: human PC-3 whole cell lysates;
Lane 6: human U20S whole cell lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Caveolin-1/CAV1 antigen affinity purified monoclonal antibody (Catalog # M00179-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for Caveolin-1/CAV1 at approximately 22KD. The expected band size for Caveolin-1/CAV1 is at 20KD.

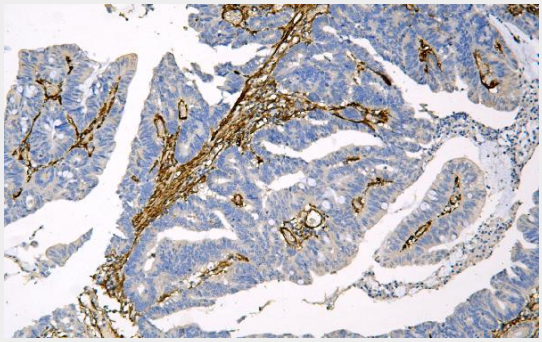

Figure 2. IHC analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1).
Caveolin-1/CAV1 was detected in paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue

section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

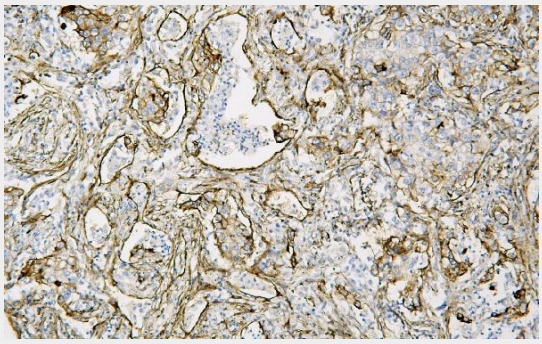

Figure 3. IHC analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

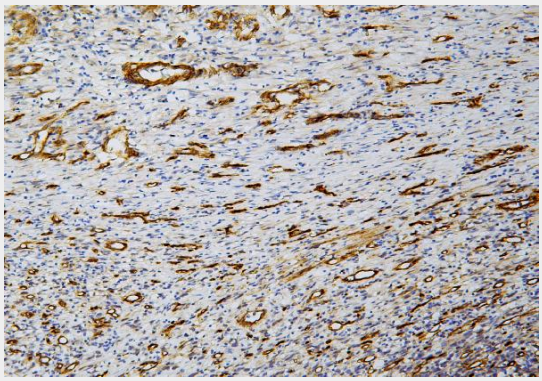

Figure 4. IHC analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in paraffin-embedded section of human melanoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

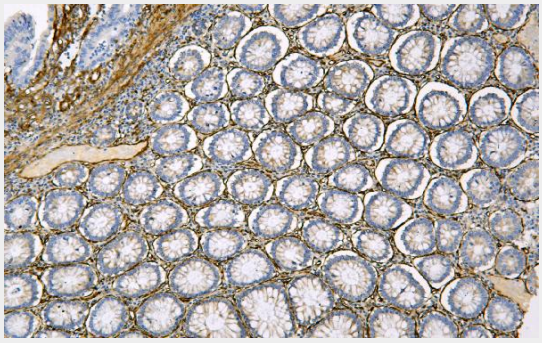

Figure 5. IHC analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in paraffin-embedded section of human intestinal cancer tissue.

Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

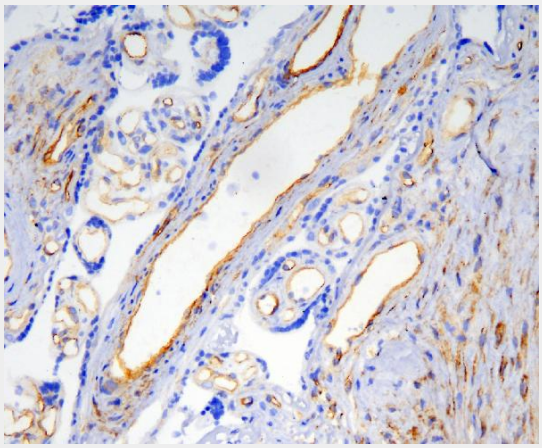

Figure 6. IHC analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in frozen section of human placenta tissue. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

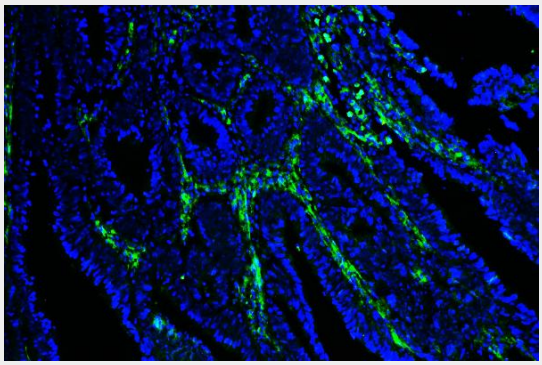

Figure 7. IF analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in paraffin-embedded section of human colorectal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/mL mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

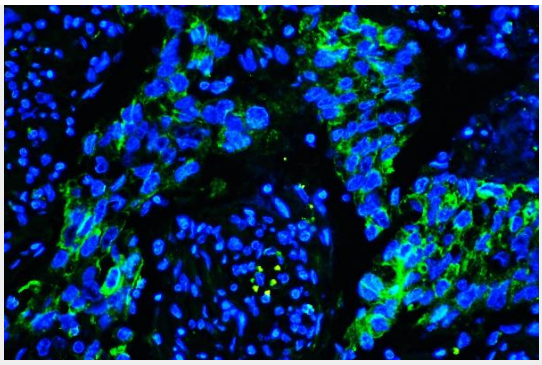

Figure 8. IF analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/mL mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

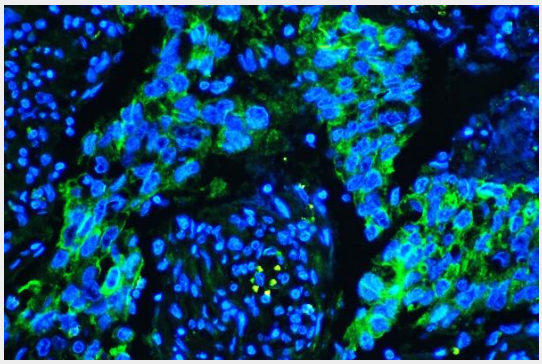

Figure 9. IF analysis of Caveolin-1/CAV1 using anti-Caveolin-1/CAV1 antibody (M00179-1). Caveolin-1/CAV1 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/mL mouse anti-Caveolin-1/CAV1 Antibody (M00179-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

Anti-Caveolin-1/CAV1 Antibody Picoband™ (monoclonal, 12C7) - Background

CAV1 (Caveolin-1) is a protein that in humans is encoded by the CAV1 gene. The CAV1 gene is mapped to 7q31.2. The scaffolding protein encoded by this gene is the main component of the caveolae plasma membranes found in most cell types. The protein links integrin subunits to the tyrosine kinase FYN, an initiating step in coupling integrins to the Ras-ERK pathway and promoting cell cycle progression. The gene is a tumor suppressor gene candidate and a negative regulator of the Ras-p42/44 MAP kinase cascade. CAV1 and CAV2 are located next to each other on chromosome 7 and express colocalizing proteins that form a stable hetero-oligomeric complex. By using alternative initiation codons in the same reading frame, two isoforms (alpha and beta) are encoded by a single transcript from this gene.