abcam

ab214448

Anti-Caveolin-1 antibody - Caveolae Marker

Lab Essentials

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.02% Proclin 300 Constituents: 50% Glycerol (glycerin, glycerine), 48.98% TBS, 1X, 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human CAV1 aa 1-50 conjugated to Keyhole Limpet Haemocyanin. The exact immunogen used to generate this antibody is proprietary information. Database link Q03135
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	-

Species	Human

Dilution info	1/100 - 1/500
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/100 - 1/1000
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

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

Target data

See full target information CAV1

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).

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

Supplementary info

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

Activity summary	Caveolin-1 also known as Cav-1 is an integral membrane protein with a molecular weight of approximately 22 kDa. It functions mechanically as a scaffolding protein in caveolae which are tiny invaginations in the plasma membrane of many cell types. These structures are particularly abundant in adipocytes endothelial cells and muscle cells. Caveolin-1 anchors itself to the cell membrane and plays a role in organizing and concentrating certain signaling molecules.
Biological function summary	Caveolae provide a platform for various signaling pathways and involve caveolin-1 as a major component. Caveolin-1 interacts with multiple signaling molecules such

	as G-protein coupled receptors and Src family kinases to modulate signal transduction. This protein forms part of a larger caveolar complex contributing to cellular processes including endocytosis and lipid regulation. Its presence as a marker in caveolae highlights its significance in cellular functions.
Pathways	Caveolin-1 influences the insulin signaling and nitric oxide (NO) signaling pathways. In the insulin signaling pathway caveolin-1 interacts with insulin receptors to modulate glucose uptake. It also associates with eNOS (endothelial nitric oxide synthase) in the NO signaling pathway impacting vascular function. These relationships highlight its role in cellular communication and regulatory mechanisms within the human body.
Associated diseases and disorders	Caveolin-1 is involved in cancer and cardiovascular diseases. In cancer altered expression of caveolin-1 contributes to tumor progression while in cardiovascular diseases it affects endothelial function through its interaction with eNOS. The connection of caveolin-1 to proteins like insulin receptors and eNOS reveals its critical influence in these conditions providing potential targets for therapeutic intervention.

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

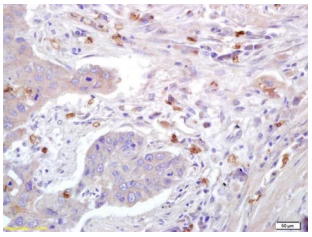
We do not recommend this combination. It is not covered by our product promise.

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.

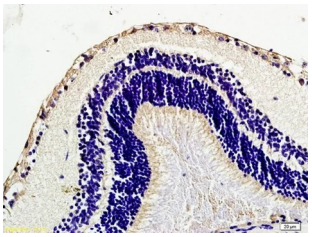
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-1 antibody - Caveolae Marker (ab214448)

Caveolin-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-1 antibody

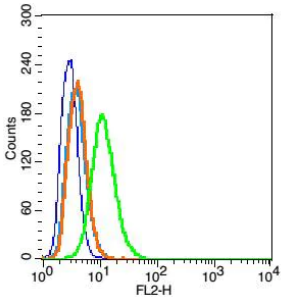
Immunohistochemical analysis of formalin-fixed, paraffin embedded Human lung carcinoma tissue labeling Caveolin-1 with ab214448 at 1/200 dilution followed by conjugation to the secondary antibody and DAB staining.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caveolin-1 antibody - Caveolae Marker (ab214448)

Caveolin-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caveolin-1 antibody

Immunohistochemical analysis of formalin-fixed, paraffin embedded Mouse eye tissue labeling Caveolin-1 with ab214448 at 1/200 dilution followed by conjugation to the secondary antibody and DAB staining.



Flow Cytometry (Intracellular) - Anti-Caveolin-1 antibody - Caveolae Marker (ab214448)

Caveolin-1 Flow Cytometry (Intracellular) staining using rabbit Anti-Caveolin-1 antibody

Intracellular flow cytometric analysis of Rat RSC96 cells labeling Caveolin-1 with ab214448 at 1/100 dilution followed byconjugated secondary (PE Conjugated) (green) compared to control cells (blue), secondary only (light blue) and isotype control (orange).



Western blot - Anti-Caveolin-1 antibody - Caveolae Marker (ab214448)

Caveolin-1 Western blot staining using rabbit Anti-Caveolin-1 antibody

All lanes:
Western blot - Anti-Caveolin-1 antibody - Caveolae Marker (ab214448) at 1/200 dilution

Lane 1:
Mouse lung tissue lysate

Lane 2:
Mouse muscle tissue lysate

Secondary

All lanes:
Goat Anti-Rabbit IgG Antibody (H+L), HRP at 1/3000 dilution

Predicted band size: 20 kDa

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