abcam

ab204919

Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR2533(2)
Purification technique	Affinity purification Protein A
Concentration	1.052 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG (Low endotoxin, Azide free), is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information ACTN4

Function	F-actin cross-linking protein which is thought to anchor actin to a variety of intracellular structures. This is a bundling protein (Probable). Probably involved in vesicular trafficking via its association with the CART complex. The CART complex is necessary for efficient transferrin receptor recycling but not for EGFR degradation (PubMed:15772161). Involved in tight junction assembly in epithelial cells probably through interaction with MICALL2. Links MICALL2 to the actin cytoskeleton and recruits it to the tight junctions (By similarity). May also function as a transcriptional coactivator, stimulating transcription mediated by the nuclear hormone receptors PPARG and RARA (PubMed:22351778). Association with IGSF8 regulates the immune synapse formation and is required for efficient T-cell activation (PubMed:22689882).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab204919 is the carrier-free version of ab108198.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Alpha Actinin 4 sometimes referred to as ACTN4 or alpha-actinin is a protein with a mass of approximately 100 kDa. It functions as an actin-binding protein particularly involved in the crosslinking of actin filaments. This protein is expressed widely with high levels found in muscle kidney and brain tissues. Alpha-actinin 4 also plays important roles in cellular structure and integrity by binding actin filaments in various cellular contexts.
Biological function summary	The role of alpha-actinin 4 extends to maintaining cytoskeletal structure and cell motility. It forms part of the larger actin-binding complex that supports cellular adhesion and mechanical stability. By linking actin filaments it allows cells to withstand mechanical stress and maintain their shape. Additionally alpha-actinin 4 contributes to cellular processes like cytokinesis and signal transduction by serving as a scaffold for signaling proteins.
Pathways	Alpha-actinin 4 interacts with diverse cellular signaling mechanisms. Key pathways include the actin cytoskeleton signaling and integrin-mediated cell adhesion. In these pathways alpha-actinin 4 works alongside proteins such as integrins and vinculin facilitating communication between the extracellular matrix and the cytoskeleton. These interactions are critical for cellular responses to environmental stimuli and adaptation during movement or development.
Associated diseases and disorders	Alpha-actinin 4 has notable impacts on conditions like focal segmental glomerulosclerosis (FSGS) and cancer. In FSGS mutation or dysregulation of alpha-actinin 4 contributes to podocyte dysfunction leading to proteinuria and kidney damage. Its role in cancer often involves altered expression influencing cell migration and invasion. The interaction with other proteins like nephrin in FSGS or E-cadherin in cancer highlights the significance of alpha-actinin 4 in pathogenic processes.

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

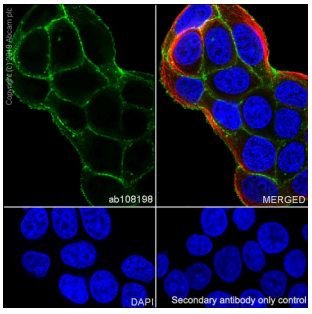
We do not recommend this combination. It is not covered by our product promise.

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.

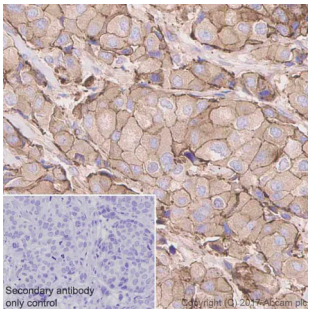
9 product images



Immunocytochemistry/ Immunofluorescence - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha Actinin 4 antibody

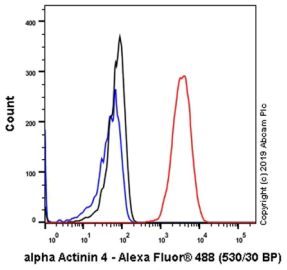
This data was developed using ab108198, the same antibody clone in a different buffer formulation.
Immunocytochemistry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling alpha Actinin 4 with Purified ab108198 at 1:250 dilution (2.0 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Actinin 4 antibody

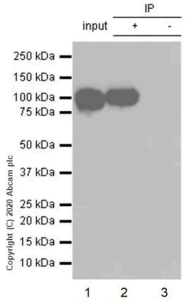
This data was developed using ab108198, the same antibody clone in a different buffer formulation.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast carcinoma tissue sections labeling alpha Actinin 4 with Purified ab108198 at 1:150 dilution (3.29 µg/mL). Heat mediated antigen retrieval was performed using Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Flow Cytometry (Intracellular) - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Flow Cytometry (Intracellular) staining using rabbit Anti-alpha Actinin 4 antibody

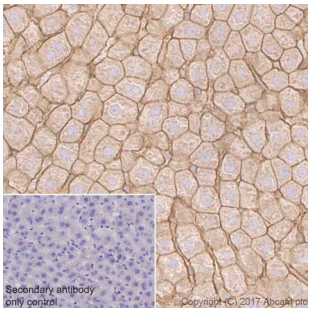
This data was developed using ab108198, the same antibody clone in a different buffer formulation.
Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling alpha Actinin 4 with Purified ab108198 at 1:50 dilution (10 µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1:2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabelled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunoprecipitation - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Purified ab108198 at 1/50 dilution (2µg) immunoprecipitating alpha Actinin 4 in HeLa whole cell lysate.
Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate 10µg
Lane 2 (+): ab108198 + HeLa whole cell lysate.
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab108198 in HeLa whole cell lysate.
VeriBlot for IP Detection Reagent (HRP) (ab131366) (1/1000 dilution) was used for Western blotting.
Blocking Buffer and concentration: 5% NFDM/TBST.
Diluting buffer and concentration: 5% NFDM/TBST.
Observed band size: 105 kDa
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108198).
All lanes:
Immunoprecipitation - Anti-alpha Actinin 4 antibody [EPR2533(2)] - Loading Control (ab108198)

Predicted band size: 105 kDa

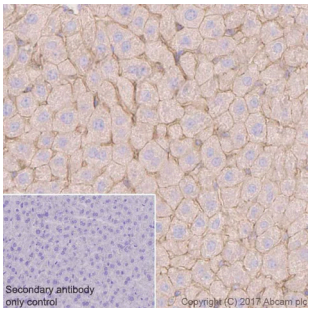


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Actinin 4 antibody

This data was developed using ab108198, the same antibody clone in a different buffer formulation.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat liver

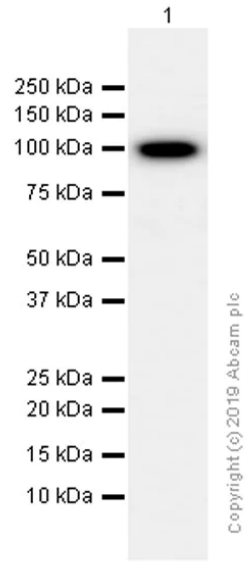
tissue sections labeling alpha Actinin 4 with Purified ab108198 at 1:150 dilution (3.29 µg/mL). Heat mediated antigen retrieval was performed using Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha Actinin 4 antibody

This data was developed using ab108198, the same antibody clone in a different buffer formulation.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse liver tissue sections labeling alpha Actinin 4 with Purified ab108198 at 1:150 dilution (3.29 µg/mL). Heat mediated antigen retrieval was performed using Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Western blot - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Western blot staining of HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate using rabbit Anti-alpha Actinin 4 antibody

This data was developed using ab108198, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-alpha Actinin 4 antibody [EPR2533(2)] - Loading Control (ab108198) at 1/10000 dilution

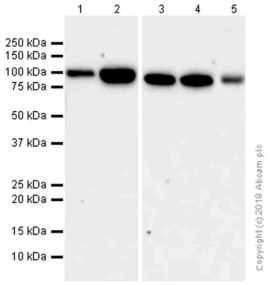
All lanes:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 105 kDa

Observed band size: 105 kDa



Western blot - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Western blot staining using rabbit Anti-alpha Actinin 4 antibody

This data was developed using ab108198, the same antibody clone in a different buffer formulation.
All lanes:

Western blot - Anti-alpha Actinin 4 antibody [EPR2533(2)] - Loading Control (ab108198) at 1/1000 dilution

Lane 1:
Human skeletal muscle lysate at 20 µg

Lane 2:
A431 (Human epidermoid carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Mouse brain lysate at 20 µg

Lane 4:
Rat brain lysate at 20 µg

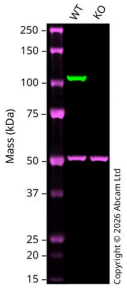
Lane 5:
Rat heart lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 105 kDa

Observed band size: 105 kDa



Western blot - Anti-alpha Actinin 4 antibody [EPR2533(2)] - BSA and Azide free (ab204919)

Alpha Actinin 4 Western blot staining using rabbit Anti-alpha Actinin 4 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108198).

Western blot: Anti-alpha Actinin 4 antibody [EPR2533(2)] - Loading Control ab108198 staining at 1/20000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 105 kDa in Wild-type U-87 MG cell lysates with no signal observed at this size in ACTN4 knockout U-87 MG cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-alpha Actinin 4 antibody [EPR2533(2)] - Loading Control (ab108198) at 1/20000 dilution

Lane 1:
Wild-type U-87 MG cell lysates at 20 µg

Lane 2:
ACTN4 knockout U-87 MG cell lysates at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 105 kDa

Observed band size: 105 kDa

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