abcam

ab32816

Anti-alpha Actinin 4 antibody [7H6] - Cytoskeleton Marker

Lab Essentials

Key facts

Isotype	IgG
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human ACTN4 aa 850 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link O43707
Clone number	7H6
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells

Notes	-

Predicted

Species	Rat, Cow, Dog, Pig, Xenopus laevis
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	4 µg/mL
Notes	-

Predicted

Species	Rat, Cow, Dog, Pig, Xenopus laevis
Dilution info	-
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	-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	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

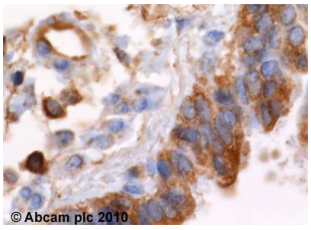
We do not recommend this combination. It is not covered by our product promise.

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.

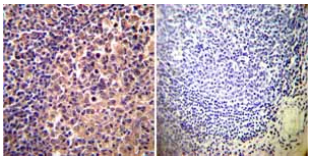
5 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Actinin 4 antibody [7H6] - Cytoskeleton Marker (ab32816)

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

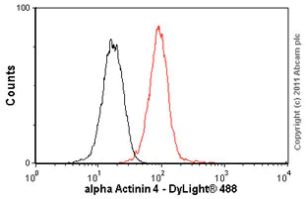
ab32816 (4 µg/ml) staining alpha actinin in human lung, using an automated system (DAKO Autostainer Plus). Using this protocol there is strong staining of both cytoplasm and nuclei of the bronchial epithelium and resident macrophage cells.
Sections were rehydrated and antigen retrieved with the Dako 3 in 1 AR buffer EDTA pH 9.0 in a DAKO PT link. Slides were peroxidase blocked in 3% H_2O_2 in methanol for 10 mins. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 min and detected with Dako envision flex amplification kit for 30 minutes. Colorimetric detection was completed with Diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that, for manual staining, optimization of primary antibody concentration and incubation time is recommended. Signal amplification may be required.



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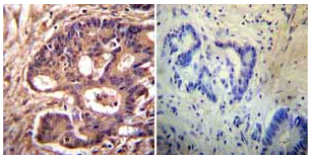
Immunohistochemistry was performed on both normal and cancer biopsies of deparaffinized Human tonsil tissue tissues. To expose target proteins heat induced antigen retrieval was performed using 10mM sodium citrate (pH6.0) buffer microwaved for 8-15 minutes. Following antigen retrieval tissues were blocked in 3% BSA-PBS for 30 minutes at room temperature. Tissues were then probed at a dilution of 1:200 with a mouse monoclonal antibody recognizing alpha Actinin 4 ab32816 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.



Flow Cytometry - Anti-alpha Actinin 4 antibody [7H6] - Cytoskeleton Marker (ab32816)

Alpha Actinin 4 Flow Cytometry staining using mouse Anti-alpha Actinin 4 antibody

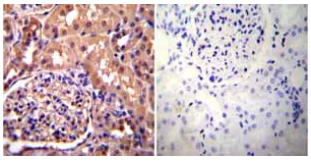
Overlay histogram showing HeLa cells stained with ab32816 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab32816, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was a goat anti-mouse DyLight® 488 (IgG; H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was a mix of mouse IgG1 [ICIGG1], (ab91353, 1µg/1x10^6 cells), IgG2a [ICIGG2A], (ab91361, 1µg/1x10^6 cells), IgG2b [PLPV219], (ab91366, 1µg/1x10^6 cells), IgG3 [MG3-35], (ab18394, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha Actinin 4 antibody [7H6] - Cytoskeleton Marker (ab32816)

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

Immunohistochemistry was performed on both normal and cancer biopsies of deparaffinized Human colon carcinoma tissues. 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 mouse monoclonal antibody recognizing alpha Actinin 4 ab32816 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.



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

Immunohistochemistry was performed on both normal and cancer biopsies of deparaffinized Human kidney tissue tissues. 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 mouse monoclonal antibody recognizing alpha Actinin 4 ab32816 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.

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