abcam

ab68167

Anti-Sarcomeric Alpha Actinin antibody [EP2529Y]

Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] ab68167 is a rabbit monoclonal antibody that is used in Sarcomeric Alpha Actinin western blotting and IHC. Suitable for human, mouse and rat samples.

- Recombinant format for unrivaled batch-batch consistency: no need for same-lot requests
- Antibody clone EP2529Y has been tried and trusted by researchers since 2008
- Specificity and sensitivity confirmed in IHC with multi-tissue microarray (TMA) validation

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP2529Y
Purification technique	Affinity purification Protein A
Concentration	0.142 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 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

IP

Tested

Species	Human
Dilution info	1/20 - 1/40
Notes	-

Expected

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

Flow Cyt

Not recommended

Species	Mouse
Dilution info	-

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Rat
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Human
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

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	Stable for 12 months at -20°C

Notes

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	Sarcomeric Alpha Actinin often referred to as alpha-actinin or A-actinin is a protein that functions mechanically as a cross-linker of actin filaments in the sarcomere. It plays a critical role in organizing the actin cytoskeleton providing structural integrity and facilitating muscle contraction. The protein typically has a molecular mass of approximately 100 kDa. It is expressed in a variety of tissues including skeletal and cardiac muscle where it establishes the architecture of the Z-disc by anchoring actin filaments.
Biological function summary	Sarcomeric alpha actinin associates with multiple proteins to form a complex that coordinates muscle function. It not only serves as a structural component but also participates in signaling processes influencing muscle repair and growth. Alpha actinin connects to other cytoskeletal proteins and adaptors coordinating with integrin pathways to transmit external mechanical signals into cellular responses.

	The ability of alpha actinin to interact with a range of proteins like filamin and spectrin enhances its role in maintaining cellular architecture.
Pathways	Alpha actinin is critical in both the integrin and dystrophin-glycoprotein complex pathways facilitating signal transduction and maintaining muscle stability. Its interaction with actin filaments is important for pathways involving cell adhesion and motility. Within these pathways actin-related proteins such as ACTN2 and titin partner with alpha actinin to sustain cellular structure and function during dynamic processes including muscle contraction and relaxation.
Associated diseases and disorders	Mutations or defects in alpha actinin have implications in muscular dystrophy and cardiomyopathy. These conditions often involve disruptions in the muscle's structural framework and mechanical signaling where alpha actinin's interaction with dystrophin becomes significant. Additionally such disorders may showcase altered connectivity between alpha actinin and spectrin further affecting muscle integrity and function in pathological conditions.

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

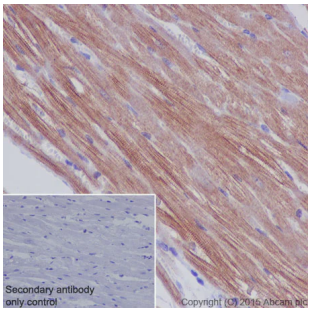
We do not recommend this combination. It is not covered by our product promise.

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.

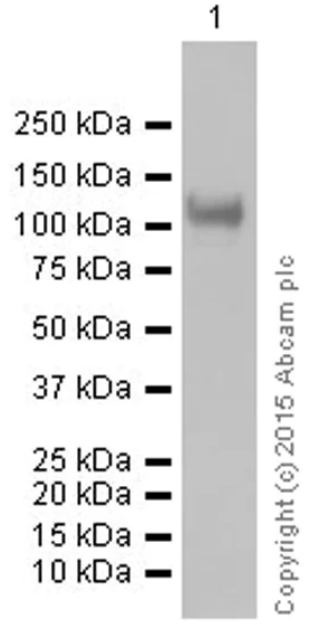
Full details and terms and conditions can be found here:
Terms & Conditions.

9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse cardiac muscle tissue labelling Sarcomeric Alpha Actinin with purified ab68167 at 1/100. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

Blocking and dilution buffer: 5% NFDM /TBST.

All lanes:
Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167) at 1/20000 dilution

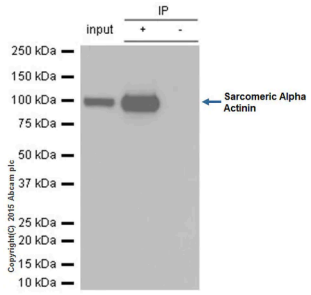
All lanes:
Human fetal heart tissue lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 103 kDa

Observed band size: 103 kDa



Immunoprecipitation - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

ab68167 (purified) at 1/20 immunoprecipitating Sarcomeric Alpha Actinin in HepG2 whole cell lysate.

Lane 1 (input): HepG2 whole cell lysate (10µg)

Lane 2 (+): ab68167 + HepG2 whole cell lysate.

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab68167 in HepG2 whole cell lysate.

For western blotting, VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution.

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

All lanes:
Immunoprecipitation - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167) at 1/20 dilution

Lane 1:
HepG2 whole cell lysate at 10 µg

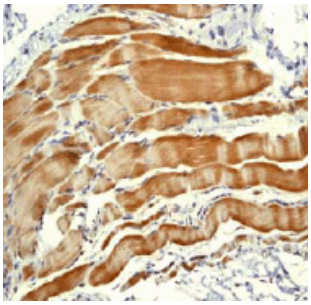
Lane 2:

ab68167 + HepG2 whole cell lysate at 10 µg

Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab68167 in HepG2 whole cell lysate

Predicted band size: 103 kDa

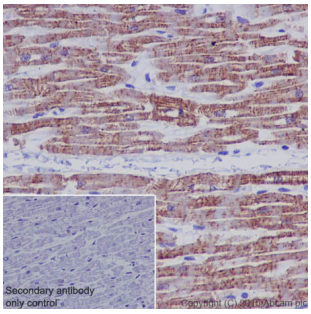
Observed band size: 103 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

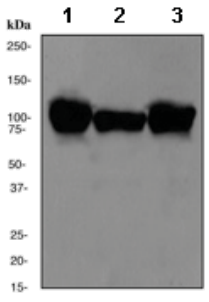
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human muscle tissue labelling Sarcomeric Alpha Actin with unpurified ab68167 at a dilution of 1/100.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cardiac muscle tissue labelling Sarcomeric Alpha Actinin with purified ab68167 at 1/100. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

All lanes:
Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167) at 1/20000 dilution

Lane 1:
Human skeletal muscle lysate at 10 µg

Lane 2:
Rat heart lysate at 10 µg

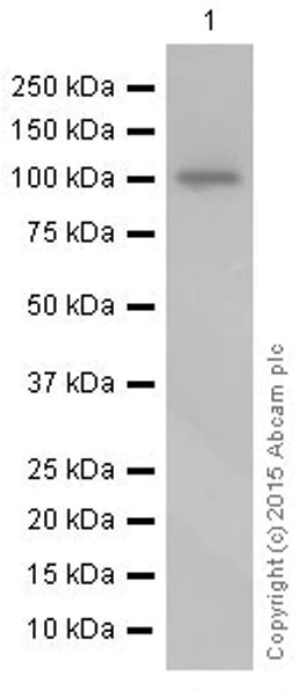
Lane 3:
Human heart lysate at 10 µg

Secondary

All lanes:
HRP-conjugated goat anti-rabbit IgG at 1/2000 dilution

Predicted band size: 103 kDa

Observed band size: 103 kDa



Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

Blocking and dilution buffer: 5% NFDM /TBST.

All lanes:
Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167) at 1/20000 dilution

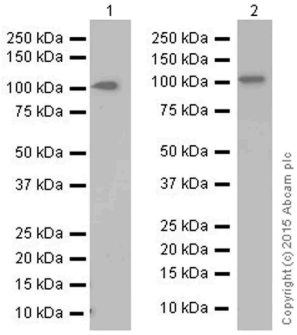
All lanes:
Mouse heart tissue lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 103 kDa

Observed band size: 103 kDa



Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

Blocking and dilution buffer: 5% NFDM /TBST.

All lanes:
Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167) at 1/10000 dilution

Lane 1:
Mouse brain tissue lysate at 10 µg

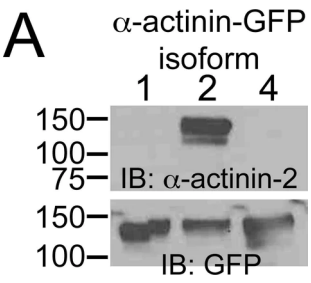
Lane 2:
Rat brain tissue lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 103 kDa

Observed band size: 103 kDa



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Western blot - Anti-Sarcomeric Alpha Actinin antibody [EP2529Y] (ab68167)

Sarcomeric Alpha Actinin western blot using anti-Sarcomeric Alpha Actinin antibody [EP2529Y] ab68167. Publication image and figure legend from Hodges, J. L., Vilchez, S. M., et al., 2014, PLoS One, PubMed 25007055.

ab68167 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab68167 please see the product overview.

α-actinin-2 localizes to post-synaptic sites in dendritic spines on hippocampal neurons.A) An anti-α-actinin antibody (ab68167) recognizes α-actinin-2 and not α-actinin-1 or α-actinin-4. CHO-K1 cells were transfected with human α-actinin-1-GFP, α-actinin-2-GFP, or α-actinin-4-GFP. Cells were lysed and immunoblotted for α-actinin-2 and GFP. B) α-Actinin-2 is enriched in hippocampal neurons but not in glia cells or COS-7 cells, which lacks α-actinin-2. Cells were lysed and immunoblotted for α-actinin-2. Actin is the loading control. C) α-Actinin-2 localizes to dendritic spines. Hippocampal neurons were transfected at DIV 17 with GFP (green), and fixed, and immunostained for endogenous α-actinin-2 (magenta) at DIV 21. D) α-Actinin-2 co-localizes with post-synaptic markers, but not with a pre-synaptic marker. Hippocampal neurons were fixed at DIV 16 or 21 and immunostained for endogenous α-actinin-2 (green) and either endogenous synaptophysin, PSD-95, or the NR1 subunit of the NMDA receptor (magenta). E–G) The siRNA is specific for α-actinin-2. Hippocampal neurons were co-transfected at DIV 17 with GFP and either a control empty vector (pSUPER), or a vector containing siRNA against α-actinin-2 (pSUPER-α-actinin-2), or the α-actinin-2 siRNA-containing vector plus a α-actinin-2 vector conferring resistance to RNAi (pSUPER-α-actinin-2+ α-actinin-2-SS). The cells were fixed at DIV 21 and immunostained for endogenous α-actinin-2. Arrows point to the neurons co-expressing GFP and its immunostaining for α-actinin-2. For each condition (55 control cells and 46 α-actinin-2 knockdown cells), the integrated density of the cell body and dendrites were measured from the transfected neuron and adjacent untransfected neuron of the same image and the percent change was plotted, F. Error bars represent SEM. p-values were derived using the paired t-test. G) CHO-K1 cells were co-transfected with GFP, pSUPER or pSUPER-α-actinin-2, plus either α-actinin-2-Flag or α-actinin-2-SS-Flag. Transfection efficiency was close to 100% as >95% of the cells in each condition exhibited GFP fluorescence (data not shown). Cells were lysed 72 hours after transfection and immunoblotted for α-actinin-2 and α-actinin-4. Tubulin is the loading control.