abcam

ab238782

Anti-Caldesmon/CDM antibody [SP226] - 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	SP226
Purification technique	Affinity purification Protein A/G
Concentration	1.05 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS by protein A/G.

Reactivity data

WB

Tested

Species	Mouse

Dilution info	-
Notes	Incubate for 1 hour at room temperature.

Species	Human
Dilution info	-
Notes	Incubate for 1 hour at room temperature.

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	Perform heat mediated antigen retrieval before commencing with IHC staining protocol by boiling tissue section in EDTA buffer, pH 8.0 for 10 min followed by cooling at room temperature for 20 min. Primary Antibody Incubation: Incubate for 10 minutes at room temperature.

Species	Rat
Dilution info	-
Notes	Perform heat mediated antigen retrieval before commencing with IHC staining protocol by boiling tissue section in EDTA buffer, pH 8.0 for 10 min followed by cooling at room temperature for 20 min. Primary Antibody Incubation: Incubate for 10 minutes at room temperature.

Species	Human
Dilution info	-
Notes	Perform heat mediated antigen retrieval before commencing with IHC staining protocol by boiling tissue section in EDTA buffer, pH 8.0 for 10 min followed by cooling at room temperature for 20 min. Primary Antibody Incubation: Incubate for 10 minutes at room temperature.

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	Incubate for 30 minutes at 4Â°C. ab172730 - Rabbit monoclonal IgG, 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 CALD1

Function	Actin- and myosin-binding protein implicated in the regulation of actomyosin interactions in smooth muscle and nonmuscle cells (could act as a bridge between myosin and actin filaments). Stimulates actin binding of tropomyosin which increases the stabilization of actin filament structure. In muscle tissues, inhibits the actomyosin ATPase by binding to F-actin. This inhibition is attenuated by calcium-calmodulin and is potentiated by tropomyosin. Interacts with actin, myosin, two molecules of tropomyosin and with calmodulin. Also plays an essential role during cellular mitosis and receptor capping. Involved in Schwann cell migration during peripheral nerve regeneration (By similarity).

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

ab238782 is the carrier-free version of ab183339.

Chicken: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

What are the advantages of a recombinant monoclonal antibody?
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.

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	Caldesmon also known as CDM CALD1 and h-caldesmon is a cytoskeletal protein with a molecular mass of approximately 93 to 120 kDa. This protein expresses itself abundantly in smooth muscle tissues yet it can also be found in non-muscle cells like fibroblasts and endothelial cells. Researchers often use specific caldesmon antibodies in immunohistochemistry allowing them to label various cellular components and providing insights into tissue composition. Due to its presence in muscle tissues caldesmon is essential for understanding muscle physiology and pathology.
Biological function summary	Caldesmon interacts with actin and myosin to regulate actomyosin contractility. This protein plays a critical role in controlling the contraction and relaxation processes in smooth muscle cells. Caldesmon forms part of a complex that includes calmodulin and tropomyosin enhancing its ability to stabilize actin filaments. It functions by inhibiting the ATPase activity of myosin therefore influencing cellular motility and shape change mechanisms. Researchers continually study caldesmon to comprehend its interactome and its significance within the larger cellular structure.
Pathways	Caldesmon participates in the regulation of the cytoskeletal dynamics vital for cell motility and structural integrity. In particular it is an important component of the contraction-relaxation cycle pathway in smooth muscle tissues. This protein has connections with pathways involving RhoA-Rho kinase where caldesmon modulates the phosphorylation levels influencing muscle contraction. Additionally

	proteins like tropomyosin and calmodulin modulate its activity especially under calcium-calmodulin-dependent pathways which further elucidates its regulatory importance.
Associated diseases and disorders	Caldesmon has associations with conditions like certain types of cancers and cardiovascular diseases. Its expression levels and distribution provide valuable information in identifying smooth muscle tumors and other pathological conditions. In oncology for example h-caldesmon serves as a marker to distinguish leiomyosarcomas from other tumors. Moreover due to its involvement in smooth muscle contractility caldesmon links with proteins such as calmodulin and tropomyosin in diseases where abnormal contraction and cellular motility play significant roles. Understanding these connections is important for developing targeted treatments and improving diagnostic accuracy.

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

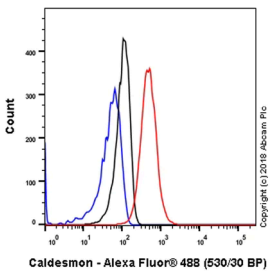
We do not recommend this combination. It is not covered by our product promise.

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.

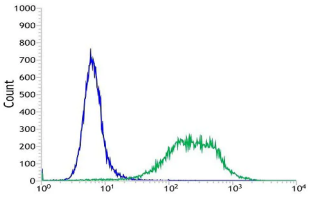
7 product images



Flow Cytometry (Intracellular) - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

Caldesmon/CDM Flow Cytometry (Intracellular) staining using rabbit Anti-Caldesmon/CDM antibody

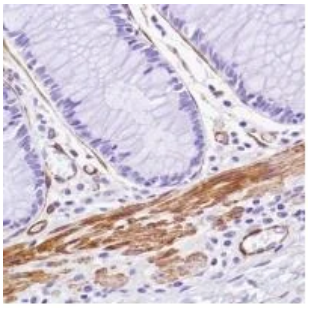
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) labeling Caldesmon/CDM with purified ab183339 at 1/230 dilution (10.05µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as a secondary antibody. Isotypecontrol - Rabbit monoclonal IgG (ab172730) (black). Unlableled control - Unlabelled cells (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183339).



Flow Cytometry (Intracellular) - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

Caldesmon/CDM Flow Cytometry (Intracellular) staining using rabbit Anti-Caldesmon/CDM antibody

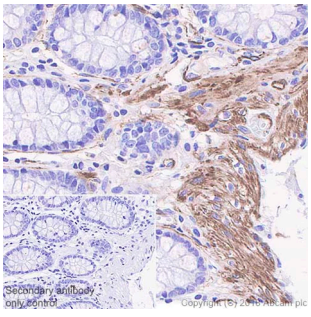
Intracellular flow cytometric analysis of HeLa cells labeling Caldesmon/CDM with ab183339 at 1/400 dilution (green) compared to a negative control Rabbit IgG (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183339).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

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

Immunohistochemical analysis of formalin-fixed, paraffin-embedded human colon tissue labeling Caldesmon/CDM with ab183339 at 1/100 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA and sodium azide (ab183339).

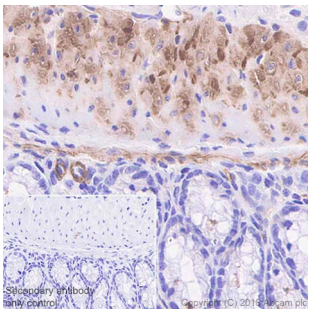


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon tissue sections labeling Caldesmon/CDM with ab183339 at 1/100 dilution (23.11 µg/ml). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on smooth muscle in human colon, performed on a Leica Biosystems BOND™ RX instrument.

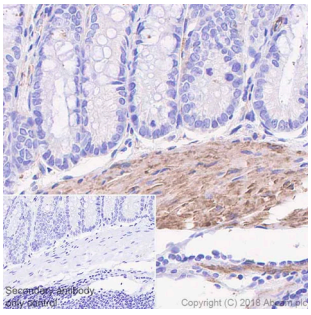
The section was incubated with ab183339 for 10 mins at room temperature. This image was generated using ab183339, the same clone, but with a different buffer formulation.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

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

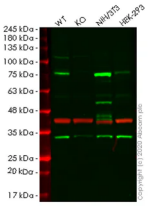
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse colon tissue sections labeling Caldesmon/CDM with ab183339 at 1/100 dilution (23.11 µg/ml). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on smooth muscle in mouse colon, performed on a Leica Biosystems BOND™ RX instrument.
The section was incubated with ab183339 for 10 mins at room temperature. This image was generated using ab183339, the same clone, but with a different buffer formulation.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat colon tissue sections labeling Caldesmon/CDM with ab183339 at 1/100 dilution (23.11 µg/ml). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on smooth muscle in rat colon, performed on a Leica Biosystems BOND™ RX instrument.
The section was incubated with ab183339 for 10 mins at room temperature. This image was generated using ab183339, the same clone, but with a different buffer formulation.



Western blot - Anti-Caldesmon/CDM antibody [SP226] - BSA and Azide free (ab238782)

Caldesmon/CDM Western blot staining using rabbit Anti-Caldesmon/CDM antibody

This data was developed using the same antibody clone in a different buffer formulation (ab183339).
Lanes 1-4: Merged signal (red and green). Green - ab183339 observed at 75 kDa. Red - loading control ab8245 observed at 36 kDa.

ab183339 Anti-Caldesmon/CDM antibody [SP226] was shown to specifically react with Caldesmon/CDM in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab265026 (knockout cell lysate ab257375) was used. Wild-type and Caldesmon/CDM knockout samples were subjected to SDS-PAGE. ab183339 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Caldesmon/CDM antibody [SP226] (ab183339) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human CALD1 (Caldesmon/CDM) knockout HeLa cell lysate (ab257375) at 20 µg

Lane 3:
NIH/3T3 cell lysate at 20 µg

Lane 4:
HEK-293 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 93 kDa

Observed band size: 75 kDa

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