

## Product datasheet

### Anti-Caldesmon/CDM antibody [SP226] ab183339

KO VALIDATED Recombinant RabMAb

[1 References](#) [9 Images](#)

#### Overview

<b>Product name</b>	Anti-Caldesmon/CDM antibody [SP226]
<b>Description</b>	Rabbit monoclonal [SP226] to Caldesmon/CDM
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> Flow Cyt (Intra), IHC-P, WB
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: HeLa and NIH/3T3 cell lysates; smooth muscle cell lysate. IHC-P: Human colon tissue; Mouse colon tissue; Rat colon Tissue Flow Cyt (intra): HeLa
<b>General notes</b>	<p>Chicken: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.</p> <p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> <li>- Long-term security of supply</li> <li>- Animal-free production</li> </ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a>.</p> <p><b>This product is FOR RESEARCH USE ONLY. For commercial use, please contact <a href="mailto:partnerships@abcam.com">partnerships@abcam.com</a>.</b></p>

#### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	<p>pH: 7.20</p> <p>Preservative: 0.1% Sodium azide</p> <p>Constituents: 1% BSA, PBS</p>

<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	SP226
<b>Isotype</b>	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab183339 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
<b>Flow Cyt (Intra)</b>		1/230 - 1/400. Incubate for 30 minutes at 4°C.  <b>ab172730</b> - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
<b>IHC-P</b>		1/100. 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.
<b>WB</b>		1/400. Predicted molecular weight: 93 kDa. Incubate for 1 hour at room temperature.

## Target

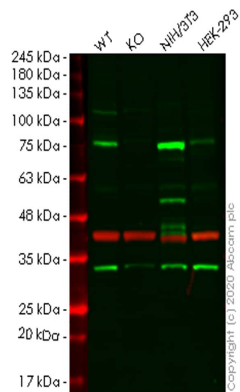
<b>Function</b>	Actin- and myosin-binding protein implicated in the regulation of actomyosin interactions in smooth muscle and nonmuscle cells (could act as a bridge between myosin and actin filaments). Stimulates actin binding of tropomyosin which increases the stabilization of actin filament structure. 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 play an essential role during cellular mitosis and receptor capping.
<b>Tissue specificity</b>	High-molecular-weight caldesmon (isoform 1) is predominantly expressed in smooth muscles, whereas low-molecular-weight caldesmon (isoforms 2, 3, 4 and 5) are widely distributed in non-muscle tissues and cells. Not expressed in skeletal muscle or heart.
<b>Sequence similarities</b>	Belongs to the caldesmon family.
<b>Domain</b>	The N-terminal part seems to be a myosin/calmodulin-binding domain, and the C-terminal a tropomyosin/actin/calmodulin-binding domain. These two domains are separated by a central helical region in the smooth-muscle form.
<b>Post-translational modifications</b>	In non-muscle cells, phosphorylation by CDK1 during mitosis causes caldesmon to dissociate from microfilaments. Phosphorylation reduces caldesmon binding to actin, myosin, and calmodulin as well as its inhibition of actomyosin ATPase activity. Phosphorylation also occurs in both quiescent and dividing smooth muscle cells with similar effects on the interaction with actin

and calmodulin and on microfilaments reorganization.

## Cellular localization

Cytoplasm > cytoskeleton. Cytoplasm > myofibril. On thin filaments in smooth muscle and on stress fibers in fibroblasts (nonmuscle).

## Images



Western blot - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

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

**Lane 1 :** Wild-type HeLa cell lysate

**Lane 2 :** CALD1 knockout HeLa cell lysate

**Lane 3 :** NIH/3T3 cell lysate

**Lane 4 :** HEK-293 cell lysate

Lysates/proteins at 20 µg per lane.

### Secondary

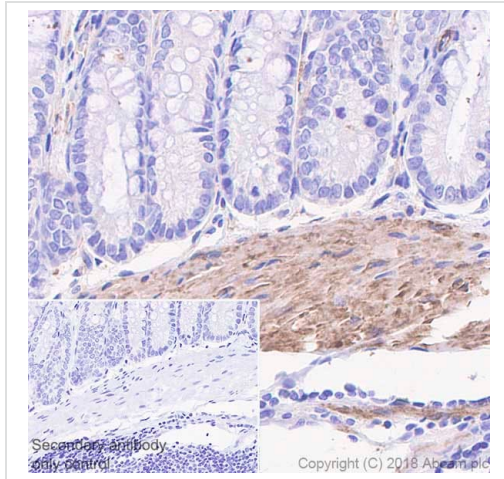
**All lanes :** Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) at 1/10000 dilution

**Predicted band size:** 93 kDa

**Observed band size:** 75 kDa

**Lanes 1-4:** Merged signal (red and green). Green - ab183339 observed at 75 kDa. Red - loading control [ab8245](#) observed at 36 kDa.

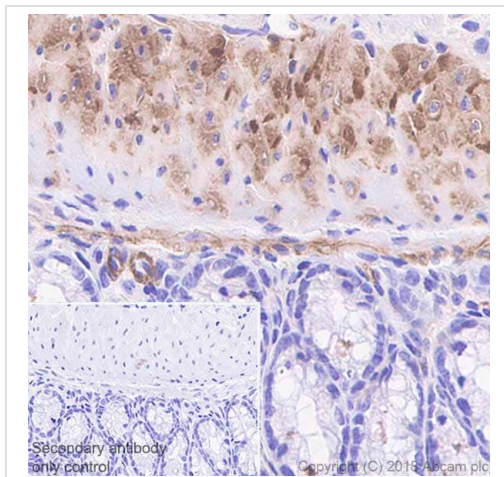
ab183339 Anti-Caldesmon/CDM antibody [SP226] was shown to specifically react with Caldesmon/CDM in wild-type HeLa cells. Loss of signal was observed when knockout cell line [ab265026](#) (knockout cell lysate [ab257375](#)) was used. Wild-type and Caldesmon/CDM knockout samples were subjected to SDS-PAGE. 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

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.

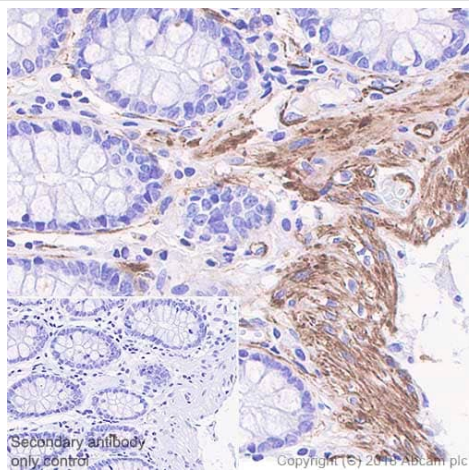
The section was incubated with ab183339 for 10 mins at room temperature.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

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.

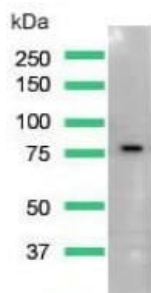
The section was incubated with ab183339 for 10 mins at room temperature.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

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.

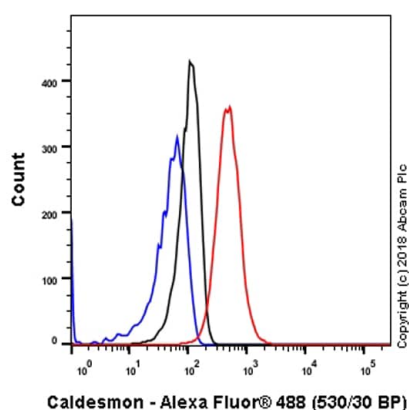
The section was incubated with ab183339 for 10 mins at room temperature.



Western blot - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

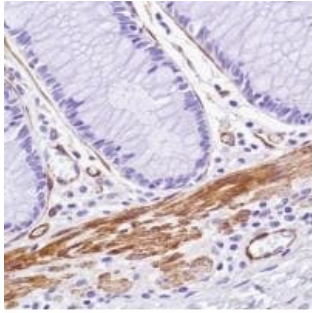
Anti-Caldesmon/CDM antibody [SP226] (ab183339) at 1/400 dilution + Smooth muscle cell lysate

**Predicted band size:** 93 kDa



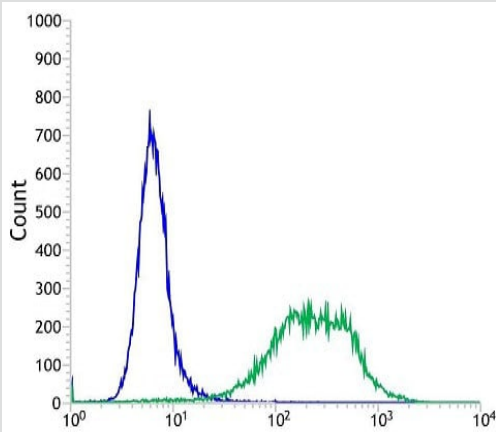
Flow Cytometry (Intracellular) - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

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. Isotype control - Rabbit monoclonal IgG (**ab172730**) (Black). Unlabeled control - Unlabelled cells (blue).



Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human colon tissue labeling Caldesmon/CDM with ab183339 at 1/100 dilution.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody [SP226] (ab183339)



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).

Flow Cytometry (Intracellular) - Anti-Caldesmon/CDM antibody [SP226] (ab183339)

Why choose a recombinant antibody?



Anti-Caldesmon/CDM antibody [SP226] (ab183339)

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