abcam

Product datasheet

# Anti-Caldesmon/CDM antibody ab68878

3 References 3 Images

## Overview

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|---|---|
| **Product name** | Anti-Caldesmon/CDM antibody |
| **Description** | Rabbit polyclonal to Caldesmon/CDM |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** IHC-P, WB, ICC/IF |
| **Species reactivity** | **Reacts with:** Mouse, Human<br>**Predicted to work with:** Rat, Rabbit, Cow, Chimpanzee, Rhesus monkey |
| **Immunogen** | Synthetic peptide corresponding to Human Caldesmon/CDM aa 750 to the C-terminus conjugated to keyhole limpet haemocyanin.<br>(Peptide available as **ab86635**) |
| **Positive control** | This antibody gave a positive signal in SK N SH Whole Cell Lysate |
| **General notes** | The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.<br>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As |

## Properties

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| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. |
| **Storage buffer** | pH: 7.40<br>Preservative: 0.02% Sodium azide<br>Constituent: PBS<br><br>Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help. |
| **Purity** | Immunogen affinity purified |

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| **Clonality** | Polyclonal |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab68878 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 |
|---|---|---|
| **IHC-P** | | Use a concentration of 5 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. |
| **WB** | | Use a concentration of 1 µg/ml. Detects a band of approximately 78 kDa (predicted molecular weight: 93 kDa). |
| **ICC/IF** | | Use a concentration of 1 µg/ml. |

## Target

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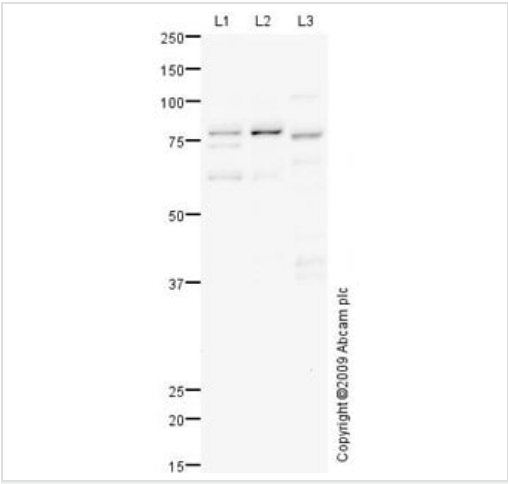
| **Function** | Actin- and myosin-binding protein implicated in the regulation of actomyosin interactions in smooth muscle and nonmuscle cells (could act as a bridge between myosin and actin filaments). Stimulates actin binding of tropomyosin which increases the stabilization of actin filament structure. 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 play an essential role during cellular mitosis and receptor capping. |
| **Tissue specificity** | 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. |
| **Sequence similarities** | Belongs to the caldesmon family. |
| **Domain** | 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. |
| **Post-translational modifications** | 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 (ab68878)

**All lanes :** Anti-Caldesmon/CDM antibody (ab68878) at 1 µg/ml

**Lane 1 :** HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate
**Lane 2 :** SK N SH (Human neuroblastoma) Whole Cell Lysate
**Lane 3 :** NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

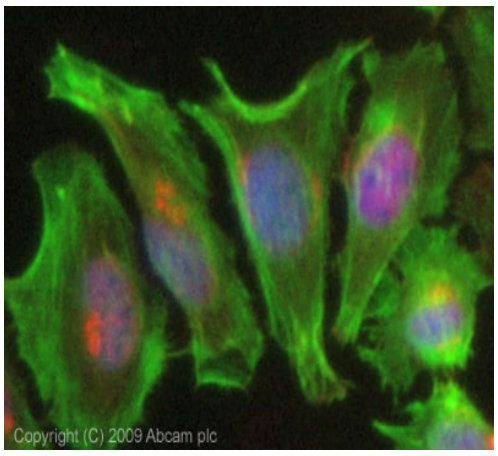
**Secondary**
**All lanes :** Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

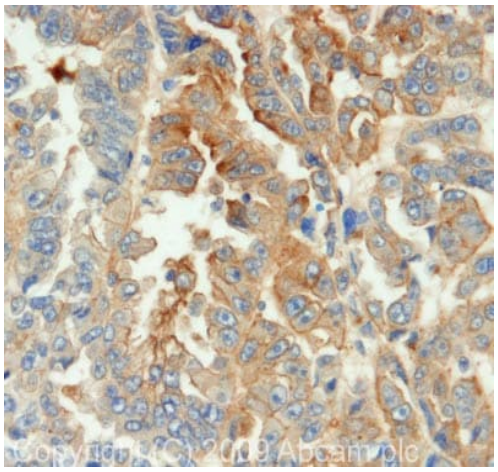
**Predicted band size:** 93 kDa
**Observed band size:** 78 kDa

The band seen at 78 kDa is consistent with the banding pattern observed for other commercially available antibodies to Caldesmon/CDM.




Immunocytochemistry/ Immunofluorescence - Anti-Caldesmon/CDM antibody (ab68878)

ICC/IF image of ab68878 stained HeLa cells. The cells were 4% PFA fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab68878, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM. This antibody also gave a positive result in 4% PFA fixed (10 min) Hek293, HepG2 and MCF7 cells at 1µg/ml, and in 100% methanol fixed (5 min) HeLa, HepG2, Hek293 and MCF7 cells at 5µg/ml.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caldesmon/CDM antibody (ab68878)

IHC image of Caldesmon/CDM staining in normal human kidney formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab68878 at 5ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



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