abcam

Product datasheet

Anti-Calmodulin 1/2/3 antibody [2D1] ab2860

1 Abreviews 9 References 10 Images

Overview

Product name	Anti-Calmodulin 1/2/3 antibody [2D1]
Description	Mouse monoclonal [2D1] to Calmodulin 1/2/3
Host species	Mouse
Specificity	This antibody detects calmodulin. It does not detect parvalbumin, tropinin, S-100, or myosin light chain kinase (MLCK).By Western blot, this antibody detects a 17 kDa protein representing calmodulin from Dictyostelium cell lysate. Immunohistochemical staining of calmodulin in Dictyostelium cells with this antibody results in staining of the contractile vacuoles.
Tested applications	**Suitable for:** Flow Cyt, IHC-P, ICC
Species reactivity	**Reacts with:** Rat
Immunogen	Other Immunogen Type corresponding to Calmodulin 1/2/3. Calmodulin purified from Dictyostelium discoideum.
Positive control	ICC: HeLa, A2058, C6 cells. IHC-P: Rat testis and cerebellum tissue. Flow Cyt: C6, MCF-7 and PC-12 cells.
General notes	

Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. 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, as well as customer reviews and Q&As.

Properties

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	Preservative: 0.05% Sodium azide Constituent: 99% PBS
Purity	Protein A purified
Primary antibody notes	Calmodulin is a small, highly conserved calcium binding protein found in all eukaryotic cells. With the capacity to bind up to four calcium ions, this 17 kDa protein acts as an important intracellular receptor for regulatory calcium signals. As it binds calcium, calmodulin undergoes conformational changes which can increase its affinity for target proteins. It acts both directly, through interaction with key target enzymes, and indirectly, via specific kinases. Studies have found that calmodulin participates in the regulation of several biological processes including energy and biosynthetic metabolism, cell motility, exocytosis, cytoskeletal assembly, and intracellular modulation of both cAMP and calcium concentrations.
Clonality	Monoclonal
Clone number	2D1
Isotype	IgG1

Applications

Our Abpromise guarantee covers the use of **ab2860** 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
Flow Cyt		Use 2µg for 10^6 cells. ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.
IHC-P		1/500.
ICC		1/50.

Target

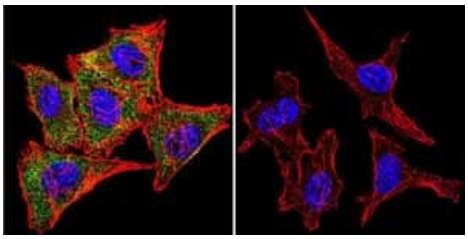
Relevance	Function: Calmodulin mediates the control of a large number of enzymes and other proteins by Ca(2+). Among the enzymes to be stimulated by the calmodulin-Ca(2+) complex are a number of protein kinases and phosphatases. Together with CEP110 and centrin, is involved in a genetic pathway that regulates the centrosome cycle and progression through cytokinesis.
Cellular localization	Cytoplasm > cytoskeleton > spindle. Cytoplasm > cytoskeleton > spindle pole. Distributed

throughout the cell during interphase, but during mitosis becomes dramatically localized to the spindle poles and the spindle microtubules.

Form

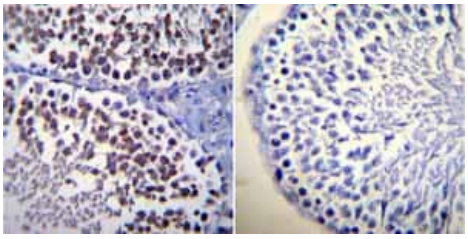
There are three genes which encode an identical calcium binding protein which is one of the four subunits of phosphorylase kinase.

Images



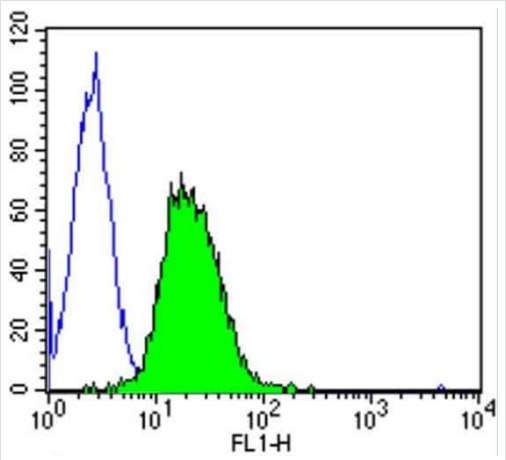
Immunocytochemistry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Immunofluorescent analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Calmodulin with ab2860. Calmodulin staining (green) F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with or an antibody recognizing Calmodulin ab2860 at a dilution of 1:20 over night at 4 ?C washed with PBS and incubated with a DyLight-488 conjugated secondary antibody. Images were taken at 60X magnification.



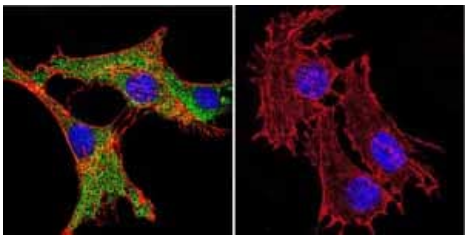
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Immunohistochemistry was performed on normal biopsies of deparaffinized rat testis tissue. 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 1:20 with a mouse monoclonal antibody recognizing Calmodulin ab2860 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.



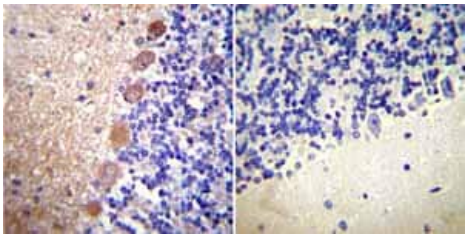
Flow Cytometry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Flow cytometry analysis of Calmodulin showing positive staining in the cytoplasm of C6 (Rat glial tumor cell line) cells compared to an isotype control (blue). Cells were harvested and adjusted to a concentration of 1-5x10^6 cells/ml. Cells were then fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant and adding 90% methanol followed by incubation for 10 minutes at room temperature. Cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with ab2860 at 2 ug/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.



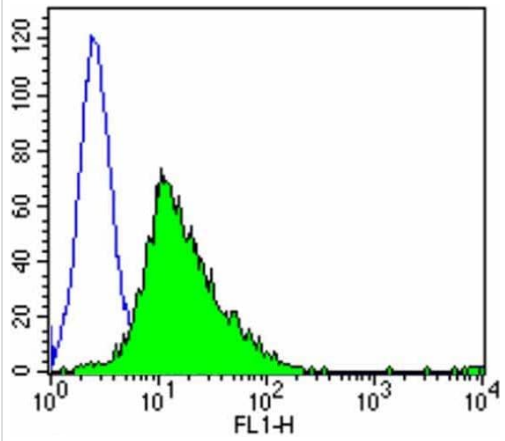
Immunocytochemistry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Immunofluorescent analysis of C6 (Rat glial tumor cell line) cells labeling Calmodulin ab2860. Calmodulin staining (green) F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with or an antibody recognizing Calmodulin ab2860 at a dilution of 1:20 over night at 4 ?C washed with PBS and incubated with a DyLight-488 conjugated secondary antibody. Images were taken at 60X magnification.



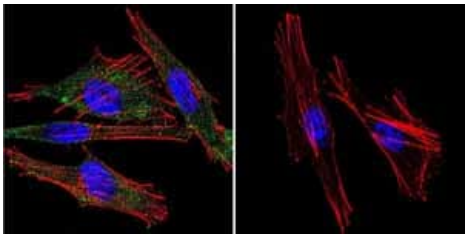
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Immunohistochemistry was performed on normal biopsies of deparaffinized rat cerebellum tissue. 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 1:20 with a mouse monoclonal antibody recognizing Calmodulin ab2860 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.



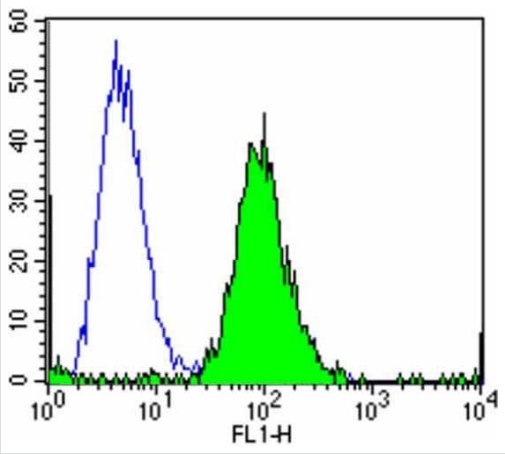
Flow Cytometry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Flow cytometry analysis of Calmodulin showing positive staining in the cytoplasm of PC-12 (Rat adrenal gland pheochromocytoma cell line) cells compared to an isotype control (blue). Cells were harvested and adjusted to a concentration of 1-5x10^6 cells/ml. Cells were then fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant and adding 90% methanol followed by incubation for 10 minutes at room temperature. Cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with ab2860 at 2 ug/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.



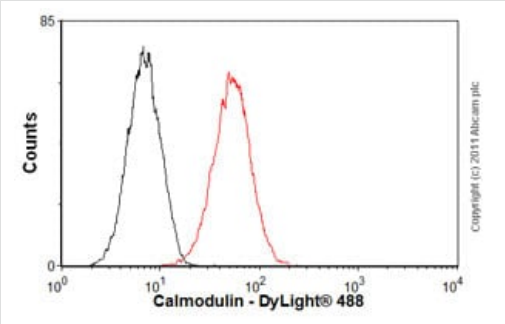
Immunocytochemistry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Immunofluorescent analysis of A2058 (Human metastatic melanoma cell line) cells labeling Calmodulin ab2860. Calmodulin staining (green) F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with or an antibody recognizing Calmodulin ab2860 at a dilution of 1:20 over night at 4 ?C washed with PBS and incubated with a DyLight-488 conjugated secondary antibody. Images were taken at 60X magnification.



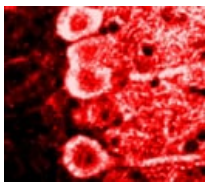
Flow Cytometry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Flow cytometry analysis of Calmodulin showing positive staining in the cytoplasm of MCF7 (Human breast adenocarcinoma cell line) cells compared to an isotype control (blue). Cells were harvested and adjusted to a concentration of 1-5x10^6 cells/ml. Cells were then fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant and adding 90% methanol followed by incubation for 10 minutes at room temperature. Cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with ab2860 at a dilution of 2 ug/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.



Flow Cytometry - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Overlay histogram showing HeLa cells stained with ab2860 (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. The cells were then incubated with the antibody (ab2860, 2µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Calmodulin 1/2/3 antibody [2D1] (ab2860)

Immunolocalization of calmodulin in rat brain cells using ab2860 (1:100)

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