abcam

ab247990

Anti-Calmodulin 1/2/3 antibody [EPR5028] - BSA and Azide free

Recombinant | RabMAb

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	EPR5028
Purification technique	Affinity purification Protein A
Concentration	1.041 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse
Dilution info	-

Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information CALM1

Function	Calmodulin acts as part of a calcium signal transduction pathway by mediating the control of a large number of enzymes, ion channels, aquaporins and other proteins through calcium-binding (PubMed:16760425, PubMed:23893133, PubMed:26969752, PubMed:27165696, PubMed:28890335, PubMed:31454269, PubMed:35568036). Calcium-binding is required for the activation of calmodulin (PubMed:16760425, PubMed:23893133, PubMed:26969752, PubMed:27165696, PubMed:28890335, PubMed:31454269, PubMed:35568036). Among the enzymes to be stimulated by the calmodulin-calcium complex are a number of protein kinases, such as myosin light-chain kinases and calmodulin-dependent protein kinase type II (CaMK2), and phosphatases (PubMed:16760425, PubMed:23893133, PubMed:26969752, PubMed:27165696, PubMed:28890335, PubMed:31454269, PubMed:35568036). Together with CCP110 and centrin, is involved in a genetic pathway that regulates the centrosome cycle and progression through cytokinesis (PubMed:16760425). Is a regulator of voltage-dependent L-type calcium channels (PubMed:31454269). Mediates calcium-dependent inactivation of CACNA1C (PubMed:26969752). Positively regulates calcium-activated potassium channel activity of KCNN2 (PubMed:27165696). Forms a potassium channel complex with KCNQ1 and regulates electrophysiological activity of the channel via calcium-binding (PubMed:25441029). Acts as a sensor to modulate the endoplasmic reticulum contacts with other organelles mediated by VMP1:ATP2A2 (PubMed:28890335). (Microbial infection) Required for Legionella pneumophila SidJ glutamylase activity. (Microbial infection) Required for C.violaceum CopC and S.flexneri OspC3 arginine ADP-riboxanase activity.

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

ab247990 is the carrier-free version of ab124742.

Patented technology

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

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	Calmodulin also known as calmoduline is a multifunctional intermediate calcium-binding protein expressed widely in eukaryotic cells. This small protein has a molecular weight of approximately 16.7 kDa. Calmodulin 1 2 and 3 serve as the key isoforms facilitating a variety of calcium-mediated processes. You can find it in cellular contexts where calcium signaling plays a regulatory role. Due to its ubiquity it acts as a mediator in numerous cellular responses.
Biological function summary	Calmodulin modulates intracellular activities by binding to calcium ions and interacting with a wide array of target proteins. It is not part of a molecular complex but can partner with proteins like kinases and phosphatases leading to downstream effects on diverse cellular processes. Calmodulin function extends to muscle contraction cell division and signal transduction impacting both basal and specialized cellular functions.
Pathways	Calmodulin operates as a functional link in calcium signaling and the MAPK signaling pathways. In these pathways calmodulin influences the activity of proteins such as myosin light-chain kinase and calmodulin-dependent protein kinase. These interactions showcase calmodulin's pivotal role in translating calcium signaling into cellular responses connecting several signaling cascades.
Associated diseases and disorders	Calmodulin has associations with certain cardiovascular diseases and neurodegenerative conditions. Its relationship with ion channel dysfunction links it to disorders like long QT syndrome. Additionally calmodulin interacts with proteins like sodium-calcium exchangers or other ion-handling channels reflecting its involvement in maintaining cellular ionic balance and consequently its implication in pathological states when dysregulated.

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.

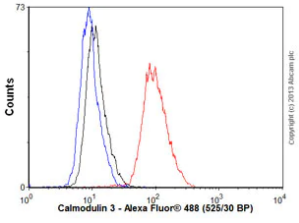
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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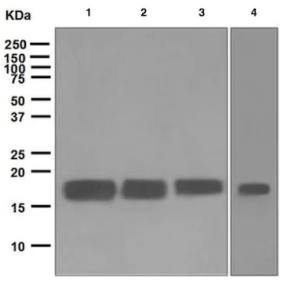
2 product images



Flow Cytometry (Intracellular) - Anti-Calmodulin 1/2/3 antibody [EPR5028] - BSA and Azide free (ab247990)

Calmodulin 1/2/3 Flow Cytometry (Intracellular) staining using rabbit Anti-Calmodulin 1/2/3 antibody

This data was developed using ab124742, the same antibody clone in a different buffer formulation.Overlay histogram showing SHSY-5Y cells stained with ab124742 (red line). The cells were fixed with 4% paraformaldehyde (10 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 followed by the antibody (ab124742, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in SHSY-5Y cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-Calmodulin 1/2/3 antibody [EPR5028] - BSA and Azide free (ab247990)

This data was developed using ab124742, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Calmodulin 1/2/3 antibody [EPR5028] (ab124742) at 1/50000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
Ramos cell lysate at 10 µg

Lane 3:
HCT116 cell lysate at 10 µg

Lane 4:
NIH 3T3 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-Rabbit HRP at 1/2000 dilution

Predicted band size: 17 kDa

Observed band size: 17 kDa

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