abcam

ab214590

Anti-VAMP2 antibody [EPR12790] - 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	EPR12790
Purification technique	Affinity purification Protein A
Concentration	0.938 - 0.98 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-

Notes	ab199376 - 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 VAMP2

Function	Involved in the targeting and/or fusion of transport vesicles to their target membrane (By similarity). Major SNARE protein of synaptic vesicles which mediates fusion of synaptic vesicles to release neurotransmitters. Essential for fast vesicular exocytosis and activity-dependent neurotransmitter release as well as fast endocytosis that mediates rapid reuse of synaptic vesicles (By similarity) (PubMed:30929742). Modulates the gating characteristics of the delayed rectifier voltage-dependent potassium channel KCNB1.

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

ab214590 is the carrier-free version of ab181869.

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	Vesicle-associated membrane protein 2 (VAMP2) also known as synaptobrevin 2 is a member of the SNARE protein family with a molecular mass of approximately 13 kDa. VAMP2 plays an important role in vesicle trafficking and membrane fusion particularly in the nervous system. It is prominently expressed in the brain where it facilitates neurotransmitter release by forming SNARE complexes essential for synaptic vesicle fusion with the presynaptic membrane.
Biological function summary	VAMP2 interacts with other SNARE proteins such as synaptosomal-associated protein 25 (SNAP-25) and syntaxin-1 to form stable complexes necessary for synaptic vesicle docking and exocytosis. As part of the SNARE complex VAMP2 contributes to the precise regulation of neurotransmitter release in neurons which is critical for synaptic transmission and plasticity. Its function is vital for the communication between neurons and proper brain function.
Pathways	VAMP2 plays a significant role in the synaptic vesicle cycle and neurotransmitter release pathways. It is central to the exocytosis pathway where it interacts with Rab3a a small GTPase that regulates vesicle docking. By participating in these pathways VAMP2 ensures efficient neurotransmission and contributes to neuronal communication processes. VAMP2's interaction with related proteins like SNAP-25 and syntaxin-1 highlights its importance in these synaptic processes.
Associated diseases and disorders	VAMP2 has associations with conditions such as epilepsy and neurodegenerative diseases. Alterations in VAMP2 expression or function can disrupt normal neurotransmitter release impacting synaptic function and leading to neurological symptoms. VAMP2's relationship with SNAP-25 and syntaxin-1 further implicates it in these disorders as these proteins collectively regulate neural communication. Understanding VAMP2's role in these illnesses aids in the development of potential therapeutic strategies targeting SNARE complex dysfunctions.

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.

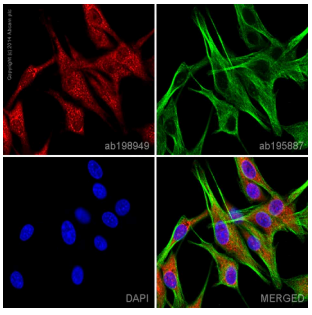
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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10 product images

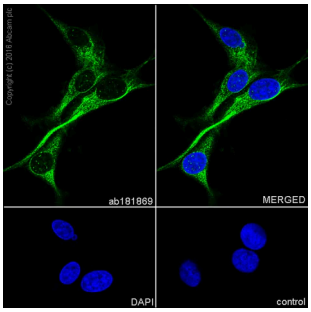


Immunocytochemistry/ Immunofluorescence - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VAMP2 antibody

Clone EPR12790 (ab214590) has been successfully conjugated by Abcam. This image was generated using Anti-VAMP2 antibody [EPR12790] (Alexa Fluor® 647). Please refer to ab198949 for protocol details.
ab198949 staining VAMP2 in U87MG cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab198949 at a 1/100 dilution (shown in red) and ab195887, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 488), at a 1/250 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

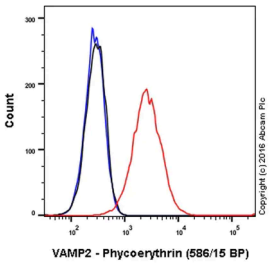


Immunocytochemistry/ Immunofluorescence - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VAMP2 antibody

ab181869 staining VAMP2 in U87-MG (human glioblastoma) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 100% methanol. Samples were incubated with primary antibody at a dilution of 1/500. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a dilution of 1/1000. DAPI was used as a nuclear counterstain.
Negative control 1:PBS only.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).



Flow Cytometry (Intracellular) - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

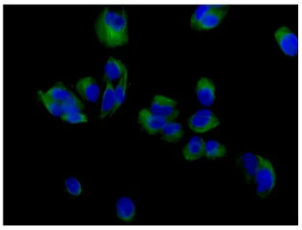
VAMP2 Flow Cytometry (Intracellular) staining using rabbit Anti-VAMP2 antibody

Clone EPR12790 (ab214590) has been successfully conjugated by Abcam. This image was generated using Anti-VAMP2 antibody [EPR12790] (PE). Please refer to ab214529 for protocol details.
Overlay histogram showing U-87MG cells stained with ab214529 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab214529, 1/2500 dilution) for 30 min at 22°C.

Isotype control antibody (black line) was Rabbit IgG (monoclonal) Phycoerythrin (ab209478) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50mW Yellow/Green laser (561nm) and 586/15 bandpass filter.

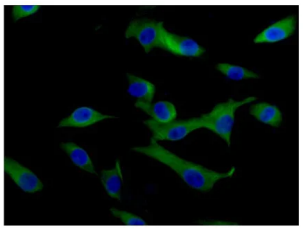
This antibody gave a positive signal in U-87MG cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Triton X-100 for 15 min used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VAMP2 antibody

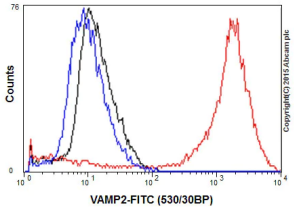
Immunofluorescent analysis of SH-SYSY cells (4% paraformaldehyde-fixed) labeling VAMP2 with unpurified ab181869 at 1/500 dilution followed by Goat anti rabbit IgG (Alexa Fluor® 488) at 1/200 dilution and counterstained with DAPI.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).



Immunocytochemistry/ Immunofluorescence - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VAMP2 antibody

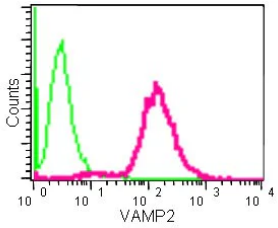
Immunofluorescent analysis of U87-MG cells (4% paraformaldehyde-fixed) labeling VAMP2 with ab181869 at 1/500 dilution followed by Goat anti rabbit IgG (Alexa Fluor®488) at 1/200 dilution and counterstained with Dapi.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).



Flow Cytometry (Intracellular) - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Flow Cytometry (Intracellular) staining using rabbit Anti-VAMP2 antibody

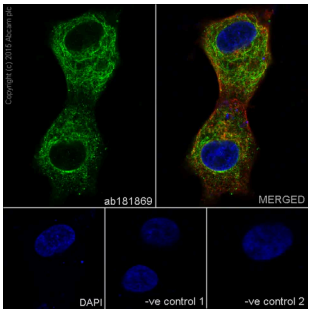
Intracellular Flow Cytometry analysis of SH-SY5Y cells labelling VAMP2 with purified ab181869 at 1/100 (red). Cells were fixed with 4% paraformaldehyde. A FITC-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).



Flow Cytometry (Intracellular) - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Flow Cytometry (Intracellular) staining using rabbit Anti-VAMP2 antibody

Intracellular Flow Cytometry analysis of Jurkat cells fixed with 2% paraformaldehyde labeling VAMP2 with unpurified ab181869 at 1/150 dilution followed by Goat anti rabbit IgG (FITC) at 1/150 dilution. Rabbit monoclonal IgG was used as an isotype control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).



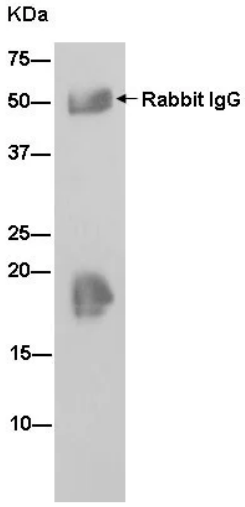
Immunocytochemistry/ Immunofluorescence - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

VAMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VAMP2 antibody

Immunocytochemistry/Immunofluorescence analysis of U87-MG (human glioblastoma) cells labelling VAMP2 with purified ab181869 at 1/250. Cells were fixed with 100% methanol and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.
Control 1: primary antibody (1/100) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).

Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).

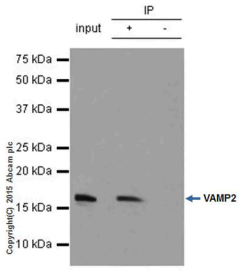


Immunoprecipitation - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

Western blot analysis of immunoprecipitation pellet from Human cerebellum lysate immunoprecipitated using ab181869 at 1/70 dilution.
Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).

All lanes:
Immunoprecipitation - Anti-VAMP2 antibody [EPR12790] (ab181869)

Predicted band size: 13 kDa



Immunoprecipitation - Anti-VAMP2 antibody [EPR12790] - BSA and Azide free (ab214590)

ab181869 (purified) at 1/150 immunoprecipitating VAMP2 in Human cerebellum whole cell lysate. 10 ug of cell lysate was present in the input. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution. A rabbit monoclonal IgG (ab172730) was used intead of ab128913 as a negative control (Lane 3).
Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab181869).

All lanes:
Immunoprecipitation - Anti-VAMP2 antibody [EPR12790] (ab181869)

Predicted band size: 13 kDa

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