abcam

ab316221

Anti-Parvalbumin antibody [RM1120] - 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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	RM1120
Purification technique	Affinity purification Protein A
Specificity	unsuitable for mouse and rat IP. unsuitable for human and rat ICC.
Concentration	1.022 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Mouse, Rat

Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-

Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information PVALB

Function	In muscle, parvalbumin is thought to be involved in relaxation after contraction (By similarity). It binds two calcium ions (PubMed:15122922, PubMed:39584689).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C

Notes

ab316221 is the carrirer-free version of ab316220.

What are recombinant multiclonals?

Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

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.

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	Parvalbumin sometimes referred to as PV is a calcium-binding protein approximately 12 kDa in size. It is recognized for its roles in muscle and neuronal tissues. Within the nervous system parvalbumin is prominently expressed in fast-spiking GABAergic interneurons while in muscle tissues it is present in fast-twitch muscle fibers. Other popular descriptors include anti PV and parvalbumins. These proteins play important roles in the regulation of cellular calcium levels.
Biological function summary	Parvalbumin helps modulate calcium ion concentration which is key in muscle relaxation and neurotransmission. It acts by buffering calcium ions and is not part of a larger protein complex. By impacting calcium transients parvalbumin affects processes like synaptic plasticity and the rapid contractions of muscle fibers. This

	is especially significant in the brain where rapid neuronal firing is needed and in muscles where quick recovery is essential.
Pathways	Parvalbumin is intimately linked with calcium signaling pathways as well as the regulation of muscle contraction. It ensures proper calcium ion homeostasis thereby aiding muscle relaxation after contraction. In the nervous system calbindin proteins parallel some of parvalbumin's functions participating in calcium ion buffering and modulation of neuron excitability. The balanced action of these proteins helps maintain cellular functions in both neurons and muscles.
Associated diseases and disorders	Insufficient parvalbumin expression may link to epilepsy and schizophrenia. Deficits in this protein could interfere with normal neurotransmission and muscle relaxation cycles. Parvalbumin deficiency influences neurotransmitter release affecting synaptic transmission which may exacerbate symptoms in these conditions. In disease mechanisms proteins such as calbindin may indirectly relate with parvalbumin showing similar patterns of dysregulation and compensating for its absence in calcium handling.

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

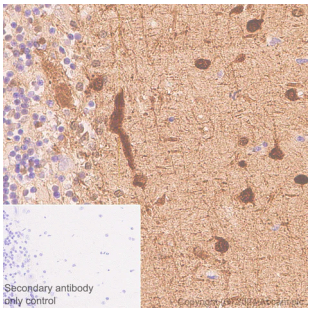
We do not recommend this combination. It is not covered by our product promise.

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.

14 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

This data was developed using ab316220, the same antibody clone in a different buffer formulation.

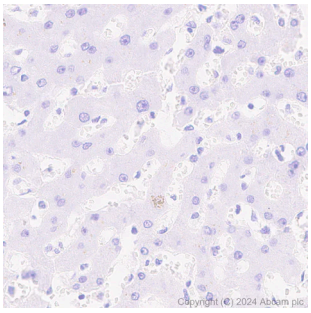
Immunohistochemical analysis of paraffin-embedded Human cerebellum tissue labeling Parvalbumin with ab316220 at 1/1000 (0.488 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human cerebellum.
The section was incubated with ab316220 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

Parvalbumin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver using rabbit Anti-Parvalbumin antibody

This data was developed using ab316220, the same antibody clone in a different buffer formulation.

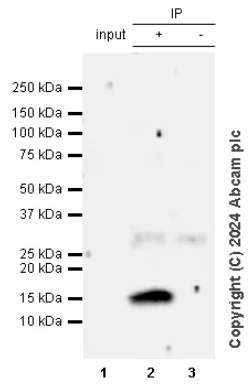
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Parvalbumin with ab316220 at 1/1000 (0.488 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on human liver.
The section was incubated with ab316220 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunoprecipitation - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

This data was developed using ab316220, the same antibody clone in a different buffer formulation.

Parvalbumin was immunoprecipitated from 0.35 mg Human hippocampus tissue lysate with ab316220 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab316220 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution.

Lane 1: Human hippocampus tissue lysate
Lane 2: ab316220 IP in Human hippocampus tissue lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab316220 in human hippocampus tissue lysate

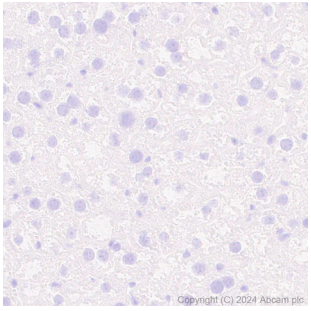
All lanes:
Immunoprecipitation - Anti-Parvalbumin antibody [RM1120] (ab316220) at 1/30 dilution

All lanes:
Human hippocampus tissue lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

Parvalbumin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse liver using rabbit Anti-Parvalbumin antibody

This data was developed using ab316220, the same antibody clone in a different buffer formulation.

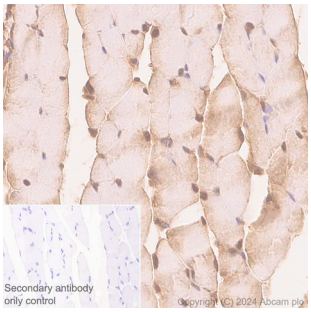
Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling Parvalbumin with ab316220 at 1/5000 (0.098 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on mouse liver.
The section was incubated with ab316220 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

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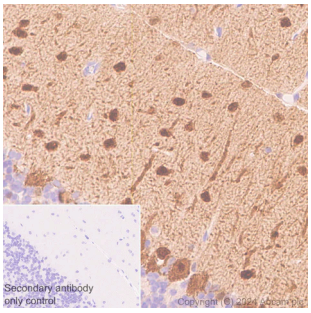
Immunohistochemical analysis of paraffin-embedded Mouse skeletal muscle tissue labeling Parvalbumin with ab316220 at 1/5000 (0.098 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on mouse skeletal muscle.
The section was incubated with ab316220 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

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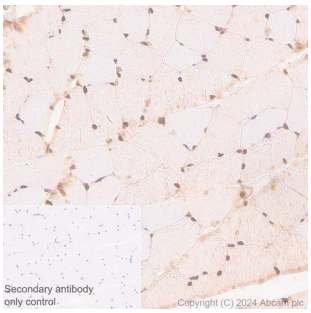
Immunohistochemical analysis of paraffin-embedded Mouse cerebellum tissue labeling Parvalbumin with ab316220 at 1/5000 (0.098 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on mouse cerebellum.
The section was incubated with ab316220 for 30 mins at room temperature.
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Counterstained with Hematoxylin.

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Immunohistochemical analysis of paraffin-embedded Rat skeletal muscle tissue labeling Parvalbumin with ab316220 at 1/1000 (0.488 ug/ml) dilution, followed by a ready to use

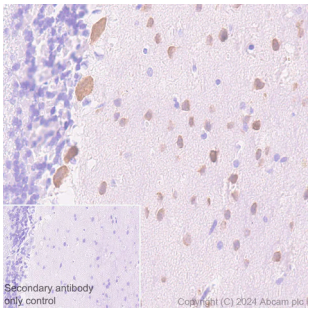
LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on rat skeletal muscle.
The section was incubated with ab316220 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

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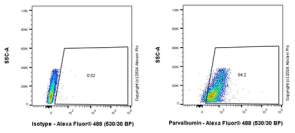
Immunohistochemical analysis of paraffin-embedded Rat cerebellum tissue labeling Parvalbumin with ab316220 at 1/1000 (0.488 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on rat cerebellum.
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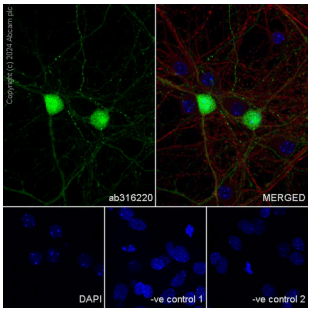


Flow Cytometry (Intracellular) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

This data was developed using ab316220, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary neuron cells labelling Parvalbumin with ab316220 at 1/50 dilution (1 ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control.

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

Parvalbumin Immunocytochemistry/ Immunofluorescence staining of Mouse primary neuron using rabbit Anti-Parvalbumin antibody

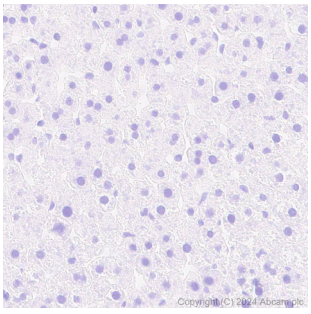
This data was developed using ab316220, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Mouse primary neuron cells labelling Parvalbumin with ab316220 at 1/100 (4.88 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green).

Confocal image showing positive staining in mouse primary neuron. Confocal scanning Z step was set as 0.3 µm followed by image processing with maximum Z projection.

ab11267 Anti-MAP2 mouse monoclonal antibody was used to counterstain at 1/200 (1.6ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

Parvalbumin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat liver using rabbit Anti-Parvalbumin antibody

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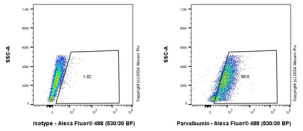
Immunohistochemical analysis of paraffin-embedded Rat liver tissue labeling Parvalbumin with ab316220 at 1/1000 (0.488 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on rat liver.
The section was incubated with ab316220 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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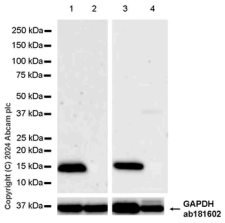


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Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Rat primary neuron cells labelling Parvalbumin with ab316220 at 1/50 dilution (1 ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control.

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Western blot - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

Parvalbumin Western blot staining using rabbit Anti-Parvalbumin antibody

This data was developed using ab316220, the same antibody clone in a different buffer formulation.

Negative control: liver.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

Exposure time: Lane 1-2: 180seconds Lane 3-4: 92 seconds

All lanes:
Western blot - Anti-Parvalbumin antibody [RM1120] (ab316220) at 1/1000 dilution

Lane 1:
Human cerebellum tissue lysate at 20 µg

Lane 2:
Human liver tissue lysate at 20 µg

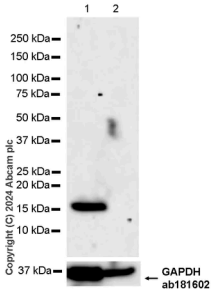
Lane 3:
Mouse skeletal muscle tissue lysate at 20 µg

Lane 4:
Mouse liver tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 12 kDa, 36 kDa



Western blot - Anti-Parvalbumin antibody [RM1120] - BSA and Azide free (ab316221)

Parvalbumin Western blot staining using rabbit Anti-Parvalbumin antibody

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In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-Parvalbumin antibody [RM1120] (ab316220) at 1/1000 dilution

Lane 1:

Rat skeletal muscle tissue lysate at 20 µg

Lane 2:
Rat liver tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 12 kDa, 36 kDa

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