abcam

ab307710

Anti-Kv4.2/KCND2 antibody [EPR26384-89]

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26384-89
Purification technique	Affinity purification Protein A
Concentration	0.532 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment - Mouse, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Recombinant fragment - Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat

Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Recombinant fragment - Mouse
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Rat
Dilution info	1/100
Notes	-

Not recommended

Species	Recombinant fragment - Mouse, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Not recommended

Species	Recombinant fragment - Mouse, Human
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Species	Rat
Dilution info	1/30
Notes	-

Not recommended

Species	Recombinant fragment - Mouse, Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Recombinant fragment - Mouse, Human
Dilution info	-
Notes	-

Target data

See full target information Kcnd2

Function

Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain, but also in rodent heart. Mediates the major part of the dendritic A-type current I(SA) in brain neurons (PubMed:10818150, PubMed:17122039, PubMed:18045912, PubMed:18187474, PubMed:20371829, PubMed:22815518). This current is activated at membrane potentials that are below the threshold for action potentials. It regulates neuronal excitability, prolongs the latency before the first spike in a series of action potentials, regulates the frequency of repetitive action potential firing, shortens the duration of action potentials and regulates the back-propagation of action potentials from the neuronal cell body to the dendrites (PubMed:10818150, PubMed:17122039, PubMed:22815518). Contributes to the regulation of the circadian rhythm of action potential firing in suprachiasmatic nucleus neurons, which regulates the circadian rhythm of locomotor activity (PubMed:22815518). Functions downstream of the metabotropic glutamate receptor GRM5 and plays a role in neuronal excitability and in nociception mediated by activation of GRM5 (PubMed:18045912). Mediates the transient outward current I(to) in rodent heart left ventricle apex cells, but not in human heart, where this current is mediated by another family member (PubMed:10601491, PubMed:11909823, PubMed:23713033, PubMed:9734479). Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochemical gradient. The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:22311982, PubMed:9734479). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCND2 and KCND3; channel properties depend on the type of pore-forming alpha subunits that are part of the channel (PubMed:11909823). In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes (PubMed:11909823). Interaction with specific isoforms of the regulatory subunits KCNIP1, KCNIP2, KCNIP3 or KCNIP4 strongly increases expression at the cell surface and thereby increases channel activity; it modulates the kinetics of channel activation and inactivation, shifts the threshold for channel activation to more negative voltage values, shifts the threshold for inactivation to less negative voltages and accelerates recovery after inactivation (By similarity). Likewise, interaction with DPP6 or DPP10 promotes expression at the cell membrane and regulates both channel characteristics and activity (PubMed:22311982). Upon depolarization, the channel goes from a resting closed state (C state) to an activated but non-conducting state (C* state), from there, the channel may either inactivate (I state) or open (O state) (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Kv4.2 also known as KCND2 is a voltage-gated potassium channel subunit that plays an important role in controlling the electrical activity of neurons. This protein has a molecular mass of approximately 74 kDa. Kv4.2 is expressed mainly in the brain especially in the hippocampus and cortex regions. The channel regulates the flow of potassium ions across the cell membrane which is essential for maintaining the resting membrane potential and modulating action potentials.
Biological function summary	The Kv4.2 protein contributes to the transient outward potassium current known as I_A. It often associates with other accessory proteins like KChIP and DPP10 to form functional Kv4.2 channel complexes. These complexes are critical in shaping the signal transmission in neurons affecting synaptic plasticity and neuronal excitability. Kv4.2's action impacts the duration and frequency of neuronal firing influencing functions such as memory and learning.

Pathways	Kv4.2 is integral to the regulation of neuronal excitability in the context of signal transduction pathways. One well-studied pathway involves its role in the MAPK/ERK signaling cascade where Kv4.2 undergoes phosphorylation events that fine-tune its activity. This pathway includes proteins like ERK which interacts with Kv4.2 to affect how neurons respond to synaptic inputs. Kv4.2 is also interconnected with CaMKII signaling which modulates its trafficking and expression in neurons.
Associated diseases and disorders	Alterations in Kv4.2 expression or function relate to neurological conditions such as epilepsy and spinocerebellar ataxia. In epilepsy abnormal Kv4.2 channel activity can lead to hyperexcitability of neurons contributing to seizure development. Interconnections with proteins like Nav1.1 influence these pathological conditions as they also regulate neuronal excitability. Furthermore mutations in Kv4.2 can disrupt normal neuronal signaling which could be implicated in spinocerebellar ataxia contributing to the range of motor coordination symptoms seen in these patients.

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

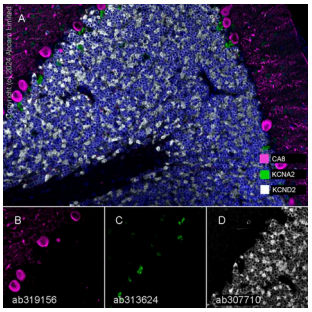
We do not recommend this combination. It is not covered by our product promise.

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.

22 product images



Multiplex immunohistochemistry - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded rat cerebellum tissue staining Carbonic Anhydrase 8/CA8 with ab319156 at a 1:10000 (0.05 ug/ml) dilution, ab313624 anti-KCNA2 used at 1:4000 (0.124 ug/ml) dilution and ab307710 anti-KCND2 used at a 1:2000 (0.266 ug/ml) dilution.

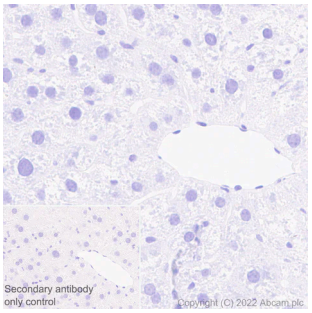
Panel A: merged staining of anti-CA8 (magenta; Opal™690), anti-KCNA2 (green; Opal™520) and anti-KCND2 (gray; Opal™570) on rat cerebellum.
Panel B: anti-CA8 staining the Purkinje cells in rat cerebellum.
Panel C: anti-KCNA2 staining the basket cells in rat cerebellum.
Panel D: anti-KCND2 staining the granule cell layer in rat cerebellum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab319156, ab313624 and ab307710 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Nuclear counter stain with DAPI.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

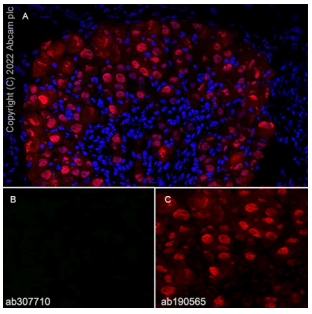


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Kv4.2/KCND2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse liver using rabbit Anti-Kv4.2/KCND2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling Kv4.2/KCND2 with ab307710 at 1/2000 (0.266 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on mouse liver (PMID: 16293790). The section was incubated with ab307710 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 Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins

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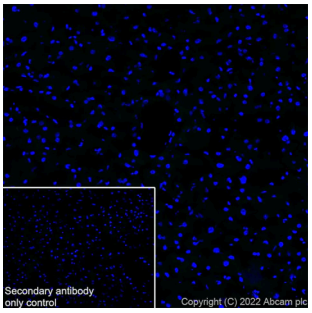


Immunohistochemistry (Frozen sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Kv4.2/KCND2 Immunohistochemistry (Frozen sections) staining of Mouse dorsal root ganglion (fresh) using rabbit Anti-Kv4.2/KCND2 antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse dorsal root ganglion (fresh) tissue labeling Kv4.2/KCND2 with ab307710 at 1/100 (5.32 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Panel A: merged staining of anti-Kv4.2 (ab307710, green) and anti-NeuN (ab190565, red) on mouse dorsal root ganglion.Panel B: anti-Kv4.2 stained on the mouse dorsal root ganglion.Panel C: anti-NeuN stained in neurons of mouse dorsal root ganglion.Negative control: dorsal root ganglion (PMID: 19668710).The nuclear counterstain was DAPI (Blue). The section was incubated in two rounds of staining: in the order of ab307710 and ab190565 for 1 hr at

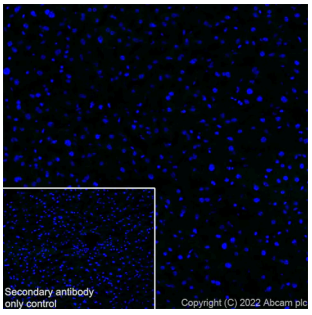
room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.



Immunohistochemistry (Frozen sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Kv4.2/KCND2 Immunohistochemistry (Frozen sections) staining of Rat liver (fresh) using rabbit Anti-Kv4.2/KCND2 antibody

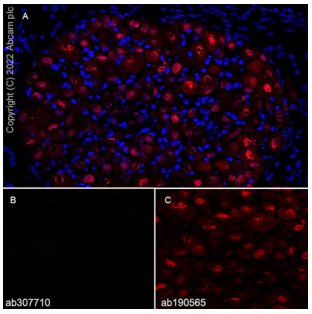
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat liver (fresh) tissue labeling Kv4.2/KCND2 with ab307710 at 1/100 (5.32 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Negative control: confocal image showing no staining on rat liver (PMID: 10729221). The nuclear counterstain was DAPI (Blue). The section was incubated with ab307710 for 60 mins at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.



Immunohistochemistry (Frozen sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Kv4.2/KCND2 Immunohistochemistry (Frozen sections) staining of Mouse liver (fresh) using rabbit Anti-Kv4.2/KCND2 antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse liver (fresh) tissue labeling Kv4.2/KCND2 with ab307710 at 1/100 (5.32 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Negative control: confocal image showing no staining on mouse liver (PMID: 10729221). The nuclear counterstain was DAPI (Blue). The section was incubated with ab307710 for 60 mins at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.

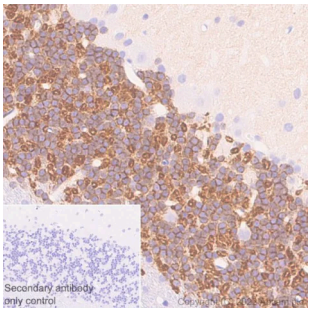


Immunohistochemistry (Frozen sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Kv4.2/KCND2 Immunohistochemistry (Frozen sections) staining of Rat dorsal root ganglion (fresh) using rabbit Anti-Kv4.2/KCND2 antibody

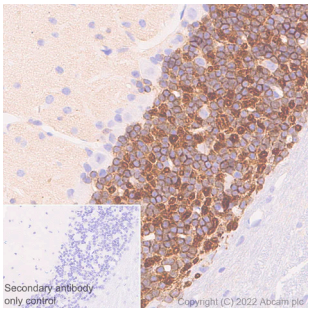
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat dorsal root ganglion (fresh) tissue labeling Kv4.2/KCND2 with ab307710 at 1/100 (5.32 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Panel A: merged staining of anti-Kv4.2 (ab307710, green) and anti-NeuN (ab190565, red) on rat dorsal root ganglion.Panel B: anti-Kv4.2 stained on the rat dorsal root ganglion.Panel C: anti-NeuN stained in neurons of rat dorsal root ganglion.Negative control: dorsal root ganglion (PMID: 19668710).The nuclear counterstain was DAPI (Blue). The section was incubated in two rounds of staining: in the order of ab307710 and ab190565 for 1 hr at room

temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.



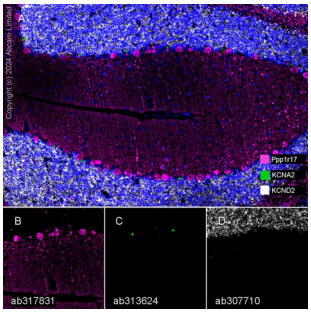
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Immunohistochemical analysis of paraffin-embedded Rat cerebellum tissue labeling Kv4.2/KCND2 with ab307710 at 1/2000 (0.266 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Cytoplasmic staining on rat cerebellum (PMID: 32899153). The section was incubated with ab307710 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 Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins



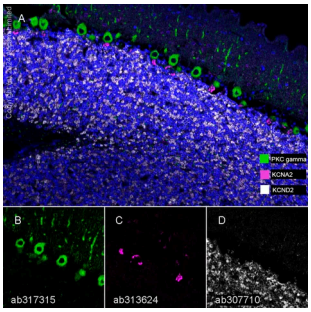
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Immunohistochemical analysis of paraffin-embedded Mouse cerebellum tissue labeling Kv4.2/KCND2 with ab307710 at 1/2000 (0.266 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Cytoplasmic staining on mouse cerebellum (PMID: 17122039). The section was incubated with ab307710 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 Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins



Multiplex immunohistochemistry - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Multiplex immunohistochemistry analysis of Formalin/PFA-fixed paraffin-embedded sections of Mouse cerebellum tissue staining with ab317831 at 1/2000 dilution, ab313624 at 1/4000 dilution, ab307710 at 1/2000 dilution. Secondary used was Opal Polymer HRP Ms + Rb. Panel A: merged staining of anti-Ppp1r17 (magenta; Opal™690), anti-KCNA2 (green; Opal™520) and anti-KCND2 (gray; Opal™570) on mouse cerebellum. Panel B: anti-Ppp1r17 staining the Purkinje cells in mouse cerebellum. Panel C: anti-KCNA2 staining the basket cells in mouse cerebellum. Panel D: anti-KCND2 staining the granule cell layer in mouse cerebellum. Nuclear DNA was labeled with DAPI (shown in blue). The section was incubated in three rounds of staining: in the order of ab317831, ab313624 and ab307710 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

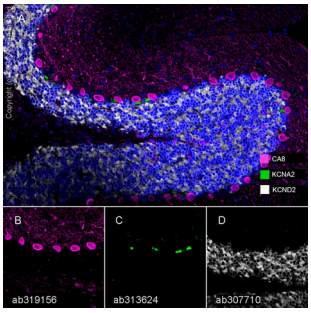
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Rat cerebellum tissue staining PKC gamma with ab317315 at a 1:5000 (0.1 µg/ml) dilution, KCNA2 with ab316324 at 1:4000 (0.124 µg/ml) dilution and KCND2 with ab307710 at a 1:2000 (0.266 µg/ml) dilution followed by secondary antibody Opal Polymer HRP Ms + Rb.

Panel A: merged staining of anti-PKC gamma (green; Opal™520), anti-KCNA2 (magenta; Opal™690) and anti-KCND2 (gray; Opal™570) on rat cerebellum.
Panel B: anti-PKC gamma staining the Purkinje cells and neuropil in rat cerebellum.
Panel C: anti-KCNA2 staining the basket cells in rat cerebellum.
Panel D: anti-KCND2 staining the granule cell layer in rat cerebellum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab317315, ab313624 and ab307710 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Multiplex immunohistochemistry - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded mouse cerebellum tissue staining Carbonic Anhydrase 8/CA8 with ab319156 at a 1:10000 (0.05 ug/ml) dilution, ab313624 anti-KCNA2 used at 1:4000 (0.124 ug/ml) dilution and ab307710 anti-KCND2 used at a 1:2000 (0.266 ug/ml) dilution.

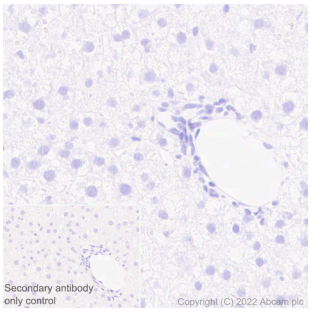
Panel A: merged staining of anti-CA8 (magenta; Opal™690), anti-KCNA2 (green; Opal™520) and anti-KCND2 (gray; Opal™570) on mouse cerebellum.
Panel B: anti-CA8 staining the Purkinje cells in mouse cerebellum.
Panel C: anti-KCNA2 staining the basket cells in mouse cerebellum.
Panel D: anti-KCND2 staining the granule cell layer in mouse cerebellum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab319156, ab313624 and ab307710 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Nuclear counter stain with DAPI.

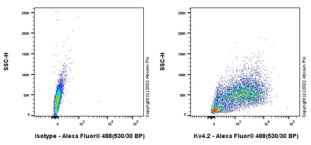
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

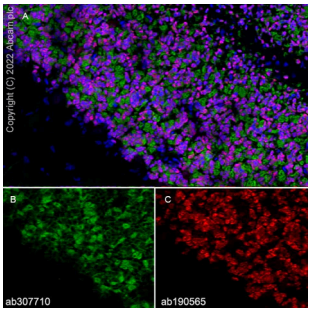
Kv4.2/KCND2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat liver using rabbit Anti-Kv4.2/KCND2 antibody

Immunohistochemical analysis of paraffin-embedded Rat liver tissue labeling Kv4.2/KCND2 with ab307710 at 1/2000 (0.266 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on rat liver. The section was incubated with ab307710 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 Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins



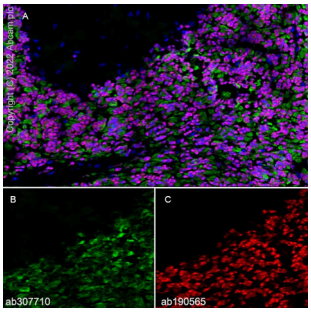
Flow Cytometry (Intracellular) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Rat primary neuron cells cells labelling Kv4.2/KCND2 with ab307710 at 1/50 dilution (1ug)/ Right (Red) compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Frozen sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

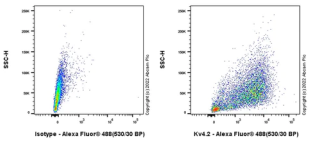
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat cerebellum (fresh) tissue labeling Kv4.2/KCND2 with ab307710 at 1/100 (5.32 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Panel A: merged staining of anti-Kv4.2 (ab307710, green) and anti-NeuN (ab190565, red) on rat cerebellum.Panel B: anti-Kv4.2 stained on the rat cerebellum.Panel C: anti-NeuN stained in neurons of rat cerebellum.The nuclear counterstain was DAPI (Blue). The section was incubated in two rounds of staining: in the order of ab307710 and ab190565 for 1 hr at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.



Immunohistochemistry (Frozen sections) - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

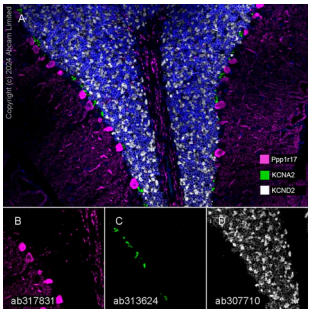
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antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 2 ug/mL dilution.



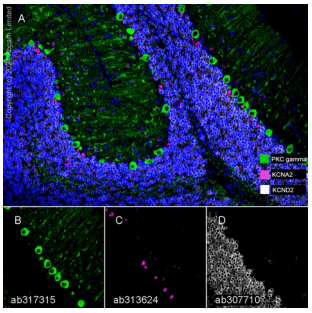
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Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary neuron cells cells labelling Kv4.2/KCND2 with ab307710 at 1/50 dilution (1ug)/ Right (Red) compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Multiplex immunohistochemistry - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Multiplex immunohistochemistry analysis of Formalin/PFA-fixed paraffin-embedded sections of Rat cerebellum tissue staining with ab317831 at 1/2000 dilution, ab313624 at 1/4000 dilution, ab307710 at 1/2000 dilution. Secondary used was Opal Polymer HRP Ms + Rb. Panel A: merged staining of anti-Ppp1r17 (magenta; Opal™690), anti-KCNA2 (green; Opal™520) and anti-KCND2 (gray; Opal™570) on rat cerebellum. Panel B: anti-Ppp1r17 staining the Purkinje cells in rat cerebellum. Panel C: anti-KCNA2 staining the basket cells in rat cerebellum. Panel D: anti-KCND2 staining the granule cell layer in rat cerebellum. Nuclear DNA was labeled with DAPI (shown in blue). The section was incubated in three rounds of staining: in the order of ab317831, ab313624 and ab307710 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

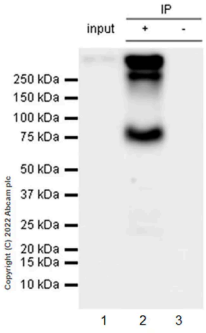
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Mouse cerebellum tissue staining PKC gamma with ab317315 at a 1:5000 (0.1 µg/ml) dilution, KCNA2 with ab316324 at 1:4000 (0.124 µg/ml) dilution and KCND2 with ab307710 at a 1:2000 (0.266 µg/ml) dilution followed by secondary antibody Opal Polymer HRP Ms + Rb.

Panel A: merged staining of anti-PKC gamma (green; Opal™520), anti-KCNA2 (magenta; Opal™690) and anti-KCND2 (gray; Opal™570) on mouse cerebellum.
Panel B: anti-PKC gamma staining the Purkinje cells and neuropil in mouse cerebellum.
Panel C: anti-KCNA2 staining the basket cells in mouse cerebellum.
Panel D: anti-KCND2 staining the granule cell layer in mouse cerebellum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab317315, ab313624 and ab307710 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



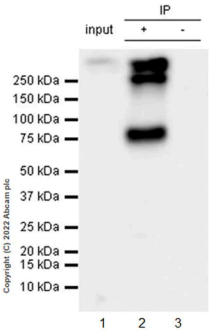
Immunoprecipitation - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Kv4.2/KCND2 was immunoprecipitated from 0.35 mg Rat cerebellum tissue lysate with ab307710 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307710 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: Rat cerebellum tissue lysate Lane 2: ab307710 IP in Rat cerebellum tissue lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307710 in rat cerebellum tissue lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 8 seconds
All lanes:
Immunoprecipitation - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710) at 1/30 dilution

Secondary

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

Exposure time: 8s



Immunoprecipitation - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

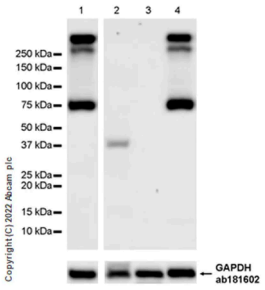
Kv4.2/KCND2 was immunoprecipitated from 0.35 mg Mouse cerebellum tissue lysate with ab307710 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307710 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution. Lane 1: Mouse cerebellum tissue lysate Lane 2: ab307710 IP in Mouse cerebellum tissue lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307710 in mouse cerebellum tissue lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 8 seconds

All lanes:
Immunoprecipitation - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710) at 1/30 dilution

Secondary

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

Exposure time: 8s



Western blot - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Negative control: liver(Human Protein Atlas Database), bladder (PMID:12575952). The molecular weight observed is consistent with what has been described in the literature (PMID:15454437). In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Exposure time: 26 seconds
All lanes:
Western blot - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710) at 1/1000 dilution

Lane 1:
Mouse cerebellum tissue lysate at 20 µg

Lane 2:
Mouse liver tissue lysate at 20 µg

Lane 3:
Mouse bladder tissue lysate at 20 µg

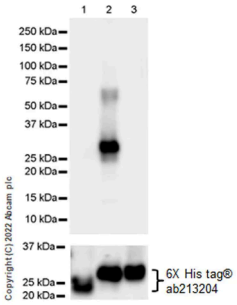
Lane 4:
Rat cerebellum tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 70 kDa, 250 kDa, 300 kDa

Exposure time: 26s



Western blot - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710)

Blocking and diluting buffer and concentration: 5% NFDM/TBST This antibody does not cross-react with mouse KCND1 and KCND3. In Western blot, anti-His antibody (ab213204) staining at 1/5000 dilution. Exposure time: 10 seconds
All lanes:
Western blot - Anti-Kv4.2/KCND2 antibody [EPR26384-89] (ab307710) at 1/1000 dilution

Lane 1:
His-tagged mouse KCND1 fragment at 10 ng

Lane 2:
His-tagged mouse KCND2 fragment at 10 ng

Lane 3:

His-tagged mouse KCND3 fragment at 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 26 kDa

Exposure time: 10s

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