abcam

ab68428

Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker

Anti-GFAP antibody [EPR1034Y] (ab68428) is a rabbit monoclonal antibody detecting GFAP in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, IHC-Fr, ICC/IF, mIHC**. Suitable for **Human, Mouse, Rat**.

- Multiplex IHC validated on the Leica BOND® MAX using Opal reagents
- Biophysical QC for unrivalled batch-batch consistency
- Over 150 publications
- Trusted since 2008

Goat, chicken, rat and mouse IgG1 / IgG2a versions of this clone also available as ab302644, ab323239, ab279291 and ab279289 / ab279290. Same clone, same staining pattern, different species antibody backbone. Learn more about chimeric antibodies

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), 0.21% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR1034Y
Purification technique	Affinity purification Protein A
Concentration	0.078 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Mouse
Dilution info	1/500 - 1/2000
Notes	-

Species	Rat
Dilution info	1/500 - 1/2000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/250 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/50 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	0.1-1 µg/mL
Notes	-

Species	Rat
Dilution info	0.1-1 µg/mL
Notes	-

Expected

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

IP

Tested

Species	Rat
Dilution info	1/20 - 1/40
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/10000
Notes	-

Species	Rat
Dilution info	1/10000
Notes	-

Species	Human
Dilution info	1/10000
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/250 - 1/1000
Notes	-

Species	Rat
Dilution info	1/250 - 1/1000

Notes	-

Expected

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

Target data

See full target information GFAP

Function	GFAP, a class-III intermediate filament, is a cell-specific marker that, during the development of the central nervous system, distinguishes astrocytes from other glial cells.

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

Find all reagents to label astrocytes in our "Astrocytes markers guide".

Anti-GFAP antibody [EPR1034Y] (ab68428) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-Fr, IHC-P, IP and WB.

Anti-GFAP antibody [EPR1034Y] (ab68428) was first used in a scientific publication in 2011 and has been cited over 106 times in peer reviewed journals. It's performance in IHC in mouse samples is trusted by the scientific community.

Abcam's high quality manufacturing and validation processes ensure Anti-GFAP antibody [EPR1034Y] (ab68428) has

high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-GFAP antibody [EPR1034Y] (ab68428) has 15 independent reviews from customers.

Anti-GFAP antibody [EPR1034Y] (ab68428) specifically detects GFAP (UniProt ID: P14136; Molecular weight: 50kDa) and is sold in a convenient trial size to enable initial testing (20 µL) and larger sizes for subsequent scaling up experiments (100 µL and 1 mL).

Conjugation-ready, carrier free format available for antibody clone EPR1034Y - ab218309.

Antibody clone EPR1034Y is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647, Alexa Fluor® 594, Alexa Fluor® 555, Alexa Fluor® 568, Alexa Fluor® 405, PE, APC, HRP, Alkaline Phosphatase, Alexa Fluor® 647, Biotin, Alexa Fluor® 488, Alexa Fluor® 647, Alexa Fluor® 647, Alexa Fluor® 488, Alexa Fluor® 488 (ab194324, ab194325, ab201732, ab201735, ab201736, ab206586, ab303005, ab303006, ab303007, ab308965, ab313596, ab314264, ab317669, ab317720, ab317721, ab317762, ab319022).

NEW: Explore our alternative host species for clone [EPR1034Y] : goat, chicken, rat, mouse. GFAP (Glial Fibrillary Acidic Protein) is a key marker in neuro research, particularly for its role in identifying astrocyte activity. It is predominantly expressed in astrocytes, the most abundant glial cells in the brain and spinal cord. Altered GFAP levels are associated with various neurological conditions, including Alzheimer's disease (AD), traumatic brain injury (TBI) and multiple sclerosis (MS). Researchers use GFAP to assess astrocytic response and neuroinflammation, making it essential for understanding the extent of brain injury and the progression of neurodegenerative diseases.

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.

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.

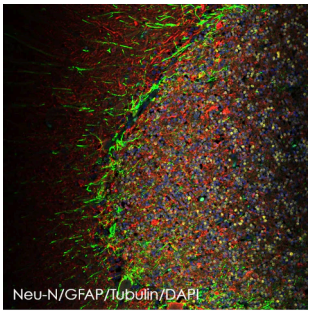
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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41 product images



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining using rabbit Anti-GFAP antibody

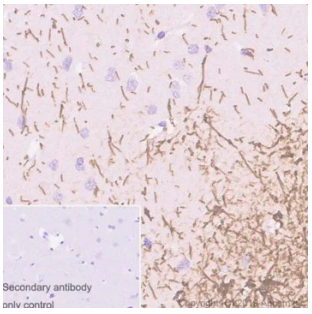
Fluorescence multiplex immunohistochemical analysis of human cerebellum tissue (formalin-fixed paraffin-embedded section).
Merged staining of Neu-N (ab177487; yellow; Opal™570), anti-beta III Tubulin (ab52623; red; Opal™690) and anti-GFAP (ab68428; green; Opal™520).

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ kit.

The section was incubated in three rounds of staining with ab177487 (1/1000 dilution), ab52623 (1/200 dilution) and ab68428 (1/250 dilution); each using a separate fluorescent tyramide signal amplification system.

Sodium citrate antigen retrieval (pH 6.0) was used in between rounds of tyramide signal amplification to remove the antibody from the previous round, to avoid any cross-reactivity.

DAPI (blue) was used as a nuclear counterstain.

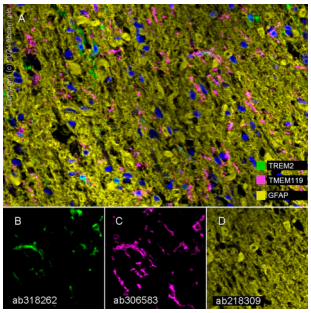


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum tissue using rabbit Anti-GFAP antibody

Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labelling GFAP with ab68428 at 1:50 followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).
Positive staining in Human cerebrum tissue.

Paraffin-embedded tissue section was incubated with ab68428 for 30 minutes at room temperature. Immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human astrocytoma using rabbit Anti-GFAP antibody

This data was developed using the same antibody clone in a different buffer formulation (ab218309).
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human astrocytoma tissue staining TREM2 with ab318262 at a 1:100 (5.29 ug/ml) dilution, ab306583 anti-TMEM119 used at 1:2000 (0.255 ug/ml) dilution and ab218309 anti-GFAP used at a 1:1000 (1.325 ug/ml) dilution.

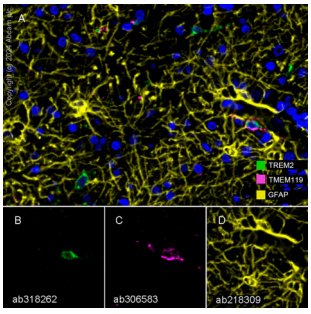
Panel A: merged staining of anti-TREM2 (green; Opal™520), anti-TMEM119 (magenta; Opal™690) and anti-GFAP (yellow; Opal™570) on human astrocytoma.
Panel B: anti-TREM2 staining microglia in human astrocytoma.
Panel C: anti-TMEM119 staining microglia in human astrocytoma.
Panel D: anti-GFAP staining astrocyte in human astrocytoma.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab318262, ab306583 and ab218309 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 counterstain with DAPI.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human cerebrum using rabbit Anti-GFAP antibody

This data was developed using the same antibody clone in a different buffer formulation containing (ab218309).
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human cerebrum tissue staining TREM2 with ab318262 at a 1:100 (5.29 ug/ml) dilution, ab306583 anti-TMEM119 used at 1:2000 (0.255 ug/ml) dilution and ab218309 anti-GFAP used at a 1:1000 (1.325 ug/ml) dilution.

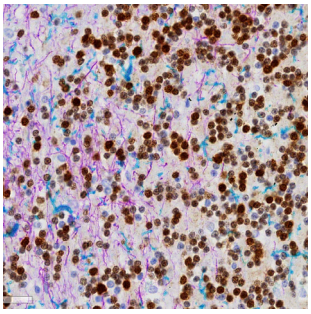
Panel A: merged staining of anti-TREM2 (green; Opal™520), anti-TMEM119 (magenta; Opal™690) and anti-GFAP (yellow; Opal™570) on human cerebrum.
Panel B: anti-TREM2 staining microglia in human cerebrum.
Panel C: anti-TMEM119 staining microglia in human cerebrum.
Panel D: anti-GFAP staining astrocytes in human cerebrum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab318262, ab306583 and ab218309 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 counterstain with DAPI.

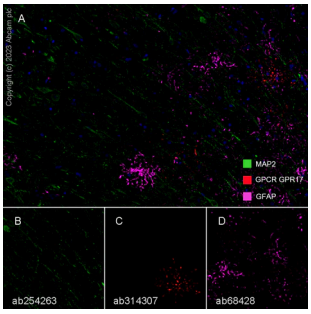
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining using rabbit Anti-GFAP antibody

Chromogenic multiplex immunohistochemical staining of FFPE normal human cerebellum tissue. ab177487, anti-NeuN DAB chromogen. ab68428, anti-GFAP purple chromogen and ab178846, anti-Iba1 teal chromogen plus haematoxylin counterstain.
Chromogenic immunostaining was performed on a Roche Ventana Discovery Ultra instrument. The section was deparaffinized and incubated with CC1 solution for 24 min 100°C. Following this with 3 rounds of staining in the order of ab177487 (1/600), ab178846 (1/4000) ab68428 (1/1000). Between rounds of staining, antibody denaturation was conducted using Ultra CC2 solution for 8 min at 100°C to avoid cross reactivity. Signal was developed with anti-rabbit HQ followed by anti-HQ HRP coupled with Chromomap DAB kit, Discovery purple or Discovery teal chromogens and haematoxylin II counterstain.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

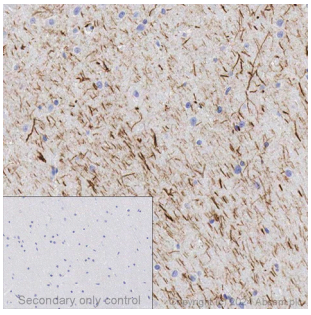
GFAP Multiplex immunohistochemistry staining of Human cerebrum using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of the human cerebrum (Formalin/PFA-fixed paraffin-embedded sections).
Panel A: merged staining of anti-GFAP (magenta; Opal™690), anti-MAP2 (green; Opal™520) and anti-GPCR GPR17 (red; Opal™570) on human cerebrum.
Panel B: anti-MAP2 staining neurons.
Panel C: anti-GPCR GPR17 staining oligodendrocytes.
Panel D: anti-GFAP staining astrocytes.

The section was incubated in three rounds of staining: in the order of ab254263, ab314307, and ab68428 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.

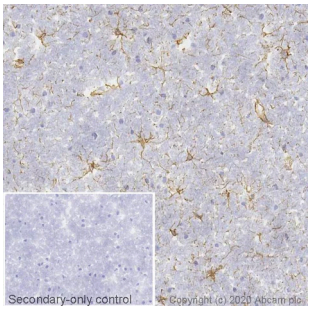
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

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

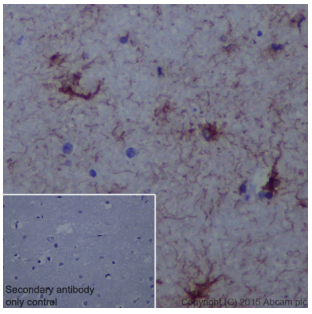
Immunohistochemical analysis of formalin fixed paraffin embedded human cerebellum labelling GFAP with ab68428 at a dilution of 1/1000. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an ChromoMap DAB (RUO) IHC Detection Kit with anti rabbit HQ and anti HQ HRP. Heat mediated antigen retrieval was conducted for 24 min with DISCOVERY cell conditioning solution (CC1) 100°C, pH 8.5. ab68428 was incubated at 37°C for 16 min. Sections were counterstained is with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.



Immunohistochemistry (Frozen sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Frozen sections) staining using rabbit Anti-GFAP antibody

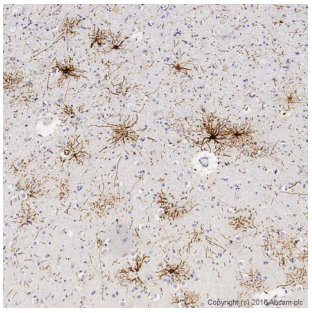
IHC image of GFAP staining in a section of frozen normal human cerebral cortex performed on a Leica BOND™ system using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab68428, 1/250 dilution, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

Immunohistochemical analysis of paraffin-embedded human cerebral cortex tissue sections labelling GFAP with purified ab68428 at a dilution of 1/500. The secondary antibody used was ab97051, Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.

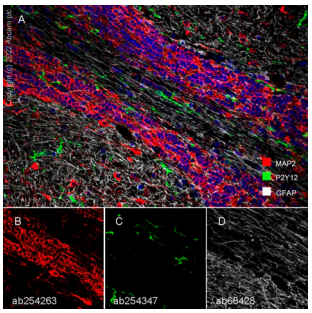


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

IHC image of GFAP staining in a formalin fixed, paraffin embedded normal human hippocampus tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab68428 at 1/100 dilution for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of the Human cerebellum (Formalin/PFA-fixed paraffin-embedded sections).

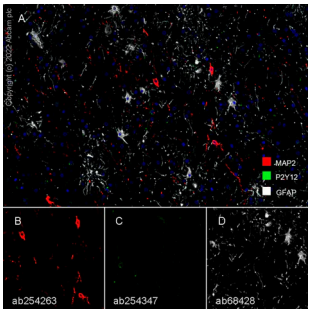
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Opal Polymer HRP Ms + Rb was used as a secondary antibody.DAPI (blue) was used as a nuclear counter stain.

Panel A: Merged staining of anti-GFAP (gray; Opal™690), anti-P2Y12 (green; Opal™520) and anti-MAP2 (red; Opal™570) on human cerebellum. Panel B: Anti-MAP2 stained cell body and dendrites of neurons. Panel C: Anti-P2Y12 stained on microglial cells. Panel D: Anti-GFAP stained on astrocytes.

The section was incubated in three rounds of staining: in the order of ab68428, ab254347, and ab254263 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$^{BOND®}$ RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of the Human cerebrum (Formalin/PFA-fixed paraffin-embedded sections).

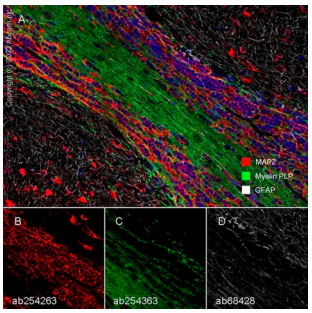
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

Opal Polymer HRP Ms + Rb was used as a secondary antibody.DAPI (blue) was used as a nuclear counter stain.

Panel A: Merged staining of anti-GFAP (gray; Opal™690), anti-P2Y12 (green; Opal™520) and anti-MAP2 (red; Opal™570) on human cerebrum. Panel B: Anti-MAP2 stained cell body and dendrites of neurons. Panel C: Anti-P2Y12 stained on microglial cells. Panel D: Anti-GFAP stained on astrocytes.

The section was incubated in three rounds of staining: in the order of ab68428, ab254347, and ab254263 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

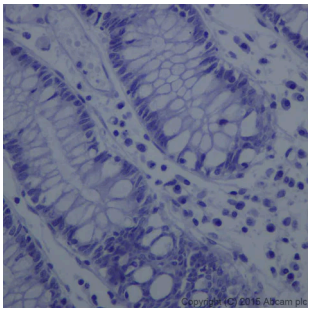
The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human cerebellum tissue using rabbit Anti-GFAP antibody

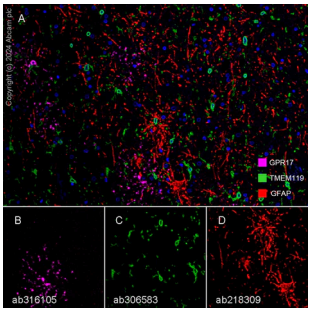
Fluorescence multiplex immunohistochemical analysis of human cerebellum tissue (formalin/PFA-fixed paraffin-embedded section). Panel A: merged staining of anti-GFAP (ab68428, gray; Opal™690), anti-Myelin PLP (ab254363, green; Opal™520) and anti-MAP2 (ab254263, red; Opal™570) on human cerebellum tissue. Panel B: anti-MAP2 stained cell body and dendrites of neurons. Panel C: anti-Myelin PLP stained on myelin sheaths of oligodendrocytes. Panel D: anti-GFAP stained on astrocytes. Opal Polymer HRP Ms + Rb was used as a secondary antibody. The immunostaining was performed on a Leica Biosystems BOND®RX instrument with an Opal™ 4-color kit. The section was incubated in three rounds of staining: in the order of ab68428 (1/50 dilution), ab254363 (1/2000 dilution), and ab254263 (1/4000 dilution) for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) was used for 20 mins. DAPI (blue) was used as a nuclear counter stain. Image acquisition was performed with Leica SP8 confocal microscope.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

Immunohistochemical analysis of paraffin-embedded human colon tissue sections labelling GFAP with purified ab68428 at a dilution of 1/500. The secondary antibody used was ab97051, Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human cerebrum tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded human cerebrum tissue sections.
Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-TMEM119 (green; Opal™520) and anti-GFAP (red; Opal™570) on human cerebrum.

Panel B: anti-GPR17 staining oligodendrocytes in human cerebrum.

Panel C: anti-TMEM119 staining microglia in human cerebrum.

Panel D: anti-GFAP staining astrocytes in human cerebrum.

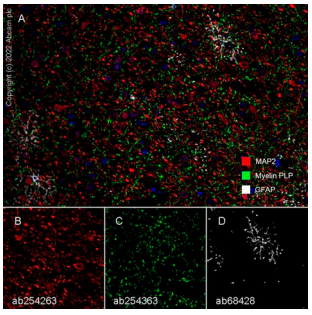
The section was incubated in three rounds of staining: in the order of ab316105 at a 1/500 dilution, ab306583 at a 1/2000 dilution, and ab218309 at a 1/1000 dilution for 30 mins at room temperature.

Each round was followed by a separate fluorescent tyramide signal amplification system. Nuclear counterstaining with DAPI.

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

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.

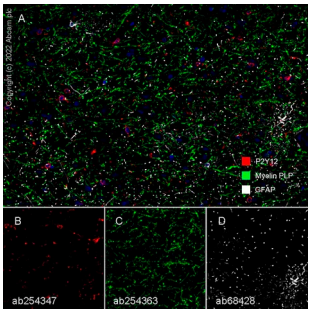
This data was developed using ab218309, the same antibody clone in a different buffer formulation.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human Cerebrum Tissue using rabbit Anti-GFAP antibody

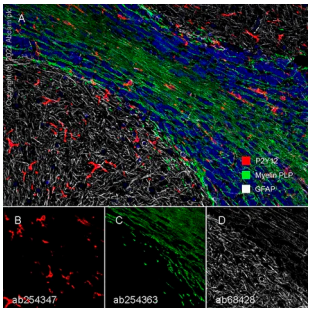
Fluorescence multiplex immunohistochemical analysis of human cerebrum tissue (formalin/PFA-fixed paraffin-embedded section). Panel A: merged staining of anti-GFAP (ab68428, gray; Opal™690), anti-Myelin PLP (ab254363, green; Opal™520) and anti-MAP2 (ab254263, red; Opal™570) on human cerebrum tissue. Panel B: anti-MAP2 stained cell body and dendrites of neurons. Panel C: anti-Myelin PLP stained on myelin sheaths of oligodendrocytes. Panel D: anti-GFAP stained on astrocytes. Opal Polymer HRP Ms + Rb was used as a secondary antibody. The immunostaining was performed on a Leica Biosystems BOND®RX instrument with an Opal™ 4-color kit. The section was incubated in three rounds of staining: in the order of ab68428 (1/50 dilution), ab254363 (1/2000 dilution), and ab254263 (1/4000 dilution) for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) was used for 20 mins. DAPI (blue) was used as a nuclear counter stain. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human cerebrum tissue using rabbit Anti-GFAP antibody

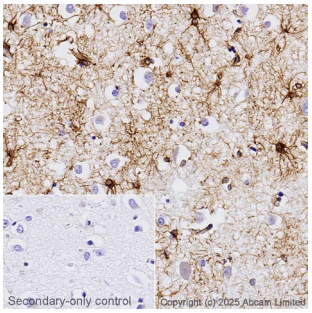
Fluorescence multiplex immunohistochemical analysis of the human cerebrum (Formalin/PFA-fixed paraffin-embedded sections). Panel A: merged staining of anti-GFAP (ab68428, gray; Opal™690), anti-Myelin PLP (ab254363, green; Opal™520) and anti-P2Y12 (ab254347, red; Opal™570) on human cerebrum. Panel B: anti-P2Y12 stained on microglial cells. Panel C: anti-Myelin PLP stained on myelin sheaths of oligodendrocytes. Panel D: anti-GFAP stained on astrocytes. Opal Polymer HRP Ms + Rb was used as a secondary antibody. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. The section was incubated in three rounds of staining: in the order of ab68428 (1/50 dilution), ab254363 (1/2000 dilution), and ab254347 (1/1000 dilution) for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. DAPI (blue) was used as a nuclear counter stain. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Human cerebellum tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of the human cerebellum (Formalin/PFA-fixed paraffin-embedded sections). Panel A: merged staining of anti-GFAP (ab68428, gray; Opal™690), anti-Myelin PLP (ab254363, green; Opal™520) and anti-P2Y12 (ab254347 red; Opal™570) on human cerebellum. Panel B: anti-P2Y12 stained on microglial cells. Panel C: anti-Myelin PLP stained on myelin sheaths of oligodendrocytes. Panel D: anti-GFAP stained on astrocytes. Opal Polymer HRP Ms + Rb was used as a secondary antibody. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. The section was incubated in three rounds of staining: in the order of ab68428 (1/50 dilution), ab254363 (1/2000 dilution), and ab254347 (1/1000 dilution) for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. DAPI (blue) was used as a nuclear counter stain. Image acquisition was performed with Leica SP8 confocal microscope.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of human Alzheimer's brain tissue using rabbit Anti-GFAP antibody

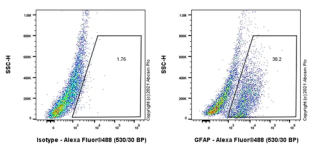
Immunohistochemical analysis of paraffin-embedded human Alzheimer's brain tissue* labelling GFAP with ab68428 at 1ug/ml followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).
Positive staining in human Alzheimer's brain.

The section was incubated with ab68428 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 with sodium citrate buffer (pH 6.0 epitope retrieval solution1) for 20 mins.

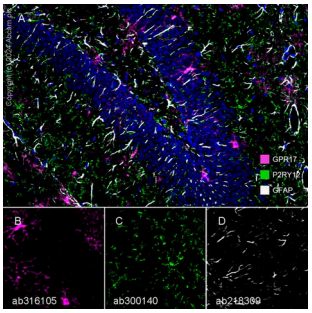
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.



Flow Cytometry (Intracellular) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

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

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary brain cells cells labelling GFAP with ab68428 at 1/500 dilution (0.1ug)/ Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse hippocampus tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded mouse hippocampus tissue sections.
Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-P2RY12 (green; Opal™520) and anti-GFAP (red; Opal™570) on mouse hippocampus.

Panel B: anti-GPR17 staining oligodendrocytes in mouse hippocampus.

Panel C: anti-P2RY12 staining microglia in mouse hippocampus.

Panel D: anti-GFAP staining astrocytes in mouse hippocampus.

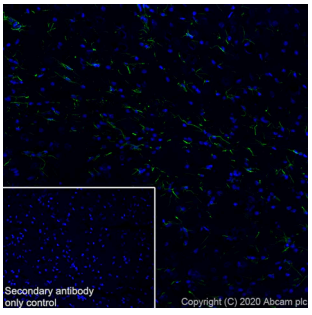
The section was incubated in three rounds of staining: in the order of ab316105 at a 1/500 dilution, ab300140 at a 1/40000, and ab218309 at a 1/1000 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

Nuclear counterstaining with DAPI.

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

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.

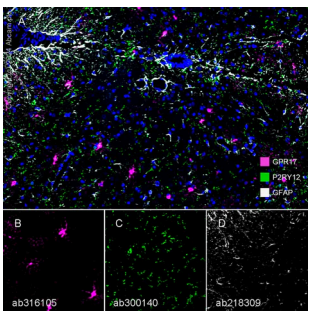
This data was developed using ab218309, the same antibody clone in a different buffer formulation.



Immunohistochemistry (Frozen sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Frozen sections) staining using rabbit Anti-GFAP antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat cerebrum tissue labeling GFAP with ab68428 at 1/1000 dilution (2.011 µg/mL) followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (2 µg/mL) (Green). Positive staining on rat cerebrum is observed. The nuclear counterstain was DAPI (Blue).
Secondary antibody control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (2 µg/mL).
Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse spinal cord tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded mouse spinal cord tissue sections.
Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-P2RY12 (green; Opal™520) and anti-GFAP (red; Opal™570) on mouse spinal cord.

Panel B: anti-GPR17 staining oligodendrocytes in mouse spinal cord.

Panel C: anti-P2RY12 staining microglia in mouse spinal cord.

Panel D: anti-GFAP staining astrocytes in mouse spinal cord.

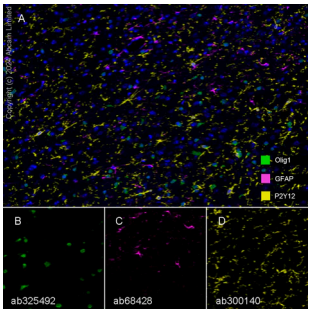
The section was incubated in three rounds of staining: in the order of ab316105 at a 1/500 dilution, ab300140 at a 1/40000 dilution, and ab218309 at a 1/1000 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

Nuclear counterstaining with DAPI.

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

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.

This data was developed using ab218309, the same antibody clone in a different buffer formulation.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse cerebrum using rabbit Anti-GFAP antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded mouse cerebrum tissue staining Olig1 with ab325492 at a 1:500 (1.036 µg/ml) dilution, ab68428 anti-GFAP used at 1:500 (0.104 µg/ml) dilution and ab300140 anti-P2Y12 used at a 1:40000 (0.013 µg/ml) dilution.

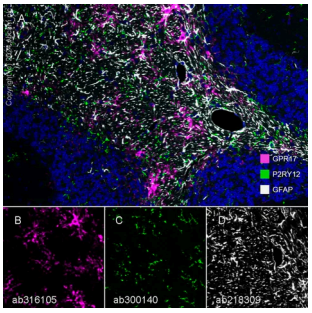
Panel A: anti-Olig1 (green; Opal™520), anti-GFAP (magenta; Opal™690) and anti-P2Y12 (yellow; Opal™570) on mouse cerebrum.
Panel B: anti-Olig1 staining oligodendrocytes in mouse cerebrum.
Panel C: anti-GFAP staining astrocytes in mouse cerebrum.
Panel D: anti-P2Y12 staining microglia in mouse cerebrum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab325492, ab68428 and ab300140 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 was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse cerebellum tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded mouse cerebellum tissue sections.
Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-P2RY12 (green; Opal™520) and anti-GFAP (red; Opal™570) on mouse cerebellum.

Panel B: anti-GPR17 staining oligodendrocytes in mouse cerebellum.

Panel C: anti-P2RY12 staining microglia in mouse cerebellum.

Panel D: anti-GFAP staining astrocytes in mouse cerebellum.

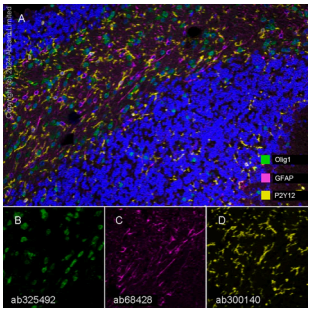
The section was incubated in three rounds of staining: in the order of ab316105 at a 1/500 dilution, ab300140 at a 1/40000 dilution, and ab218309 at a 1/1000 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

Nuclear counterstaining with DAPI.

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

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.

This data was developed using ab218309, the same antibody clone in a different buffer formulation.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse cerebellum using rabbit Anti-GFAP antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded mouse cerebellum tissue staining Olig1 with ab325492 at a 1:500 (1.036 µg/ml) dilution, ab68428 anti-GFAP used at 1:500 (0.104 µg/ml) dilution and ab300140 anti-P2Y12 used at a 1:40000 (0.013 µg/ml) dilution.

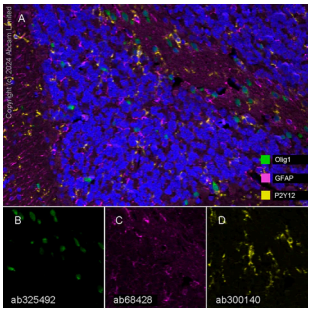
Panel A: anti-Olig1 (green; Opal™520), anti-GFAP (magenta; Opal™690) and anti-P2Y12 (yellow; Opal™570) on mouse cerebellum.
Panel B: anti-Olig1 staining oligodendrocytes in mouse cerebellum.
Panel C: anti-GFAP staining astrocytes in mouse cerebellum.
Panel D: anti-P2Y12 staining microglia in mouse cerebellum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab325492, ab68428 and ab300140 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 was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Rat cerebellum using rabbit Anti-GFAP antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded rat cerebellum tissue staining Olig1 with ab325492 at a 1:500 (1.036 µg/ml) dilution, ab68428 anti-GFAP used at 1:500 (0.104 µg/ml) dilution and ab300140 anti-P2Y12 used at a 1:40000 (0.013 µg/ml) dilution.

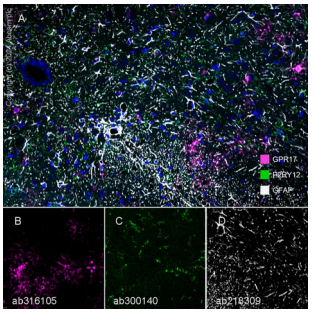
Panel A: anti-Olig1 (green; Opal™520), anti-GFAP (magenta; Opal™690) and anti-P2Y12 (yellow; Opal™570) on rat cerebellum.
Panel B: anti-Olig1 staining oligodendrocytes in rat cerebellum.
Panel C: anti-GFAP staining astrocytes in rat cerebellum.
Panel D: anti-P2Y12 staining microglia in rat cerebellum.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab325492, ab68428 and ab300140 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 was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Rat spinal cord tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded rat spinal cord tissue sections.

Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-P2RY12 (green; Opal™520) and anti-GFAP (red; Opal™570) on rat spinal cord.
Panel B: anti-GPR17 staining oligodendrocytes in rat spinal cord.
Panel C: anti-P2RY12 staining microglia in rat spinal cord.
Panel D: anti-GFAP staining astrocytes in rat spinal cord.

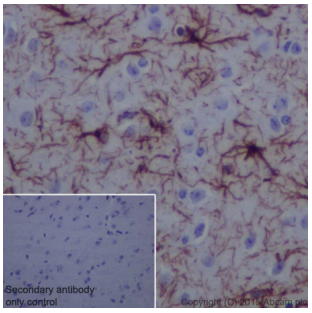
The section was incubated in three rounds of staining: in the order of ab316105 at a 1/500 dilution, ab300140 at a 1/40000 dilution, and ab218309 at a 1/1000 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

Nuclear counterstaining with DAPI.

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

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.

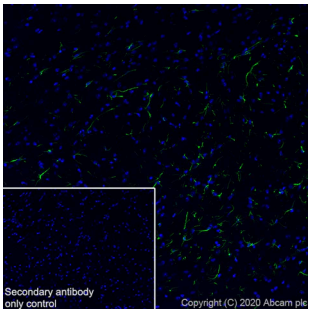
This data was developed using ab218309, the same antibody clone in a different buffer formulation.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

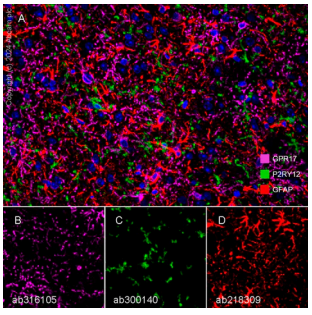
Immunohistochemical analysis of paraffin-embedded mouse cerebral cortex tissue sections labelling GFAP with purified ab68428 at a dilution of 1/500. The secondary antibody used was ab97051, Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunohistochemistry (Frozen sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Frozen sections) staining using rabbit Anti-GFAP antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse cerebrum tissue labeling GFAP with ab68428 at 1/1000 dilution (2.011 µg/mL) followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (2 µg/mL) (Green). Positive staining on mouse cerebrum is observed. The nuclear counterstain was DAPI (Blue).
Secondary antibody control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (2 µg/mL).
Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse cerebrum tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded mouse cerebrum tissue sections.
Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-P2RY12 (green; Opal™520) and anti-GFAP (red; Opal™570) on mouse cerebrum.

Panel B: anti-GPR17 staining oligodendrocytes in mouse cerebrum.

Panel C: anti-P2RY12 staining microglia in mouse cerebrum.

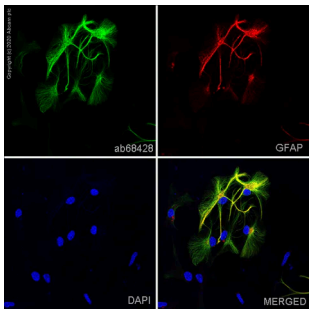
Panel D: anti-GFAP staining astrocytes in mouse cerebrum.

The section was incubated in three rounds of staining: in the order of ab316105 at a 1/500 dilution, ab300140 at a 1/140000 dilution, and ab218309 at a 1/1000 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Nuclear counterstaining with DAPI.

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

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.

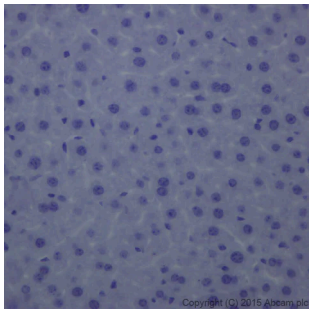
This data was developed using ab218309, the same antibody clone in a different buffer formulation.



Immunocytochemistry/ Immunofluorescence - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GFAP antibody

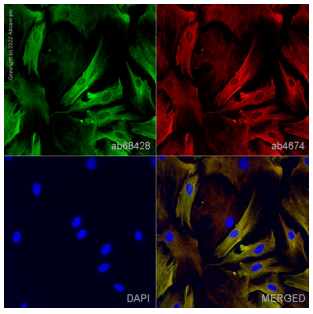
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized mouse primary neural mix culture cells labelling GFAP with ab68428 at 1/250 dilution, followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (Green). Confocal scanning Z step was set as 0.3 µm followed by image processing with maximum Z projection. ab10062 anti-GFAP antibody [GF5] at 1/100 dilution followed by ab150120 Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) at 1/1000 (2µg/ml) was used as a counterstain. The Nuclear counterstain was DAPI (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GFAP antibody

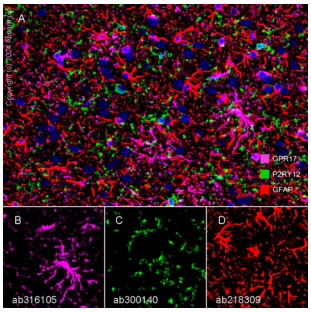
Immunohistochemical analysis of paraffin-embedded mouse liver tissue sections labelling GFAP with purified ab68428 at a dilution of 1/500. The secondary antibody used was ab97051, Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0.



Immunocytochemistry/ Immunofluorescence - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GFAP antibody

Immunofluorescence staining of GFAP using ab68428 in primary rat hippocampal mixed glia, (prepared from P2 rat hippocampal brain area, obtained from Transnetyx Tissue by BrainBits, LLC, cat.no. SDPHP4m), DIV4. The cells were fixed with 100% MeOH (5 min), permeabilized with 0.1% Triton-X-100 (in PBS) for 5 mins 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 ab68428 at 0.1 µg/ml and ab4674, Anti-GFAP antibody, at 1/1000 dilution. Cells were then incubated with ab150081, Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150176, Goat Anti-Chicken IgY H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). Images were acquired with the Perkin Elmer Operetta HCA and a maximum intensity projection of confocal sections is shown. The antibody ab68428 gave comparable results using 4% formaldehyde fixation (10 min).



Multiplex immunohistochemistry - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Rat cerebrum tissue using rabbit Anti-GFAP antibody

Fluorescence multiplex immunohistochemical analysis of formalin/PFA-fixed paraffin-embedded rat cerebrum tissue sections..
Panel A: merged staining of anti-GPR17 (magenta; Opal™690), anti-P2RY12 (green; Opal™520) and anti-GFAP (red; Opal™570) on rat cerebrum.

Panel B: anti-GPR17 staining oligodendrocytes in rat cerebrum.

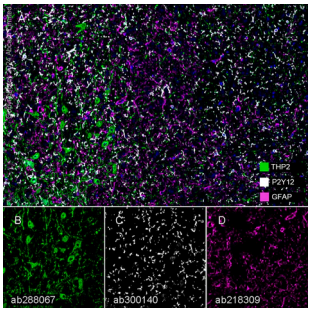
Panel C: anti-P2RY12 staining microglia in rat cerebrum.

Panel D: anti-GFAP staining astrocytes in rat cerebrum.

The section was incubated in three rounds of staining: in the order of ab316105 at 1/500 dilution, ab300140 at 1/140000 dilution , and ab218309 at 1/1000 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The secondary was Opal Polymer HRP Ms + Rb and nuclear counterstaining with DAPI.

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

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-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Multiplex immunohistochemistry staining of Mouse midbrain tissue using rabbit Anti-GFAP antibody

This data was developed using ab218309, the same antibody clone in a different buffer formulation.

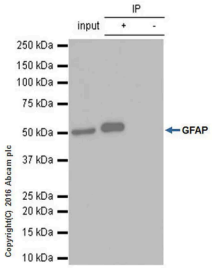
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Mouse midbrain tissue staining THP2 with ab288067 at a 1/2000 (0.315 ug/ml) dilution, P2Y12 with ab300140 at 1/40000 (0.013 ug/ml) dilution and GFAP with ab218309 at 1/1000 (1.325 ug/ml) dilution.

Panel A: merged staining of anti-THP2 (green; Opal™520), anti-P2Y12 (grey; Opal™570) and anti-GFAP (magenta; Opal™690) on mouse midbrain.
Panel B: anti-THP2 staining the serotonergic neurons in mouse midbrain.
Panel C: anti-P2Y12 staining microglia in mouse midbrain.
Panel D: anti-GFAP staining astrocytes in mouse midbrain.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab2888067, ab300140 and ab218309 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-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

ab68428 at 1/20 dilution immunoprecipitating GFAP in rat brain whole cell lysate observed at 50 KDa (lanes 1 and 2).
Lane 1 (input): Rat brain whole cell lysate 10ug

Lane 2 (+): ab68428 + Rat brain whole cell lysate

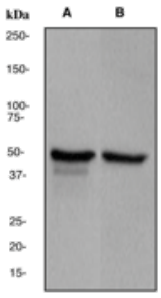
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab68428 in Rat brain whole cell lysate

For western blotting, ab68428 was used followed by VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution.

Blocking and Diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

Predicted band size: 49 kDa



Western blot - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Western blot staining using rabbit Anti-GFAP antibody

All lanes:
Western blot - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428) at 1/5000 dilution

Lane 1:
Human brain lysate at 10 µg

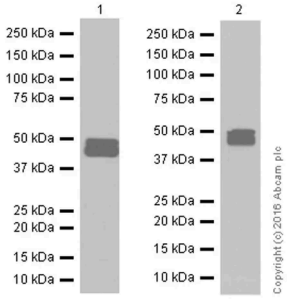
Lane 2:
Rat brain lysate at 10 µg

Secondary

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

Predicted band size: 49 kDa

Observed band size: 50 kDa



Western blot - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Western blot staining using rabbit Anti-GFAP antibody

Blocking and Diluting buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428) at 1/10000 dilution

Lane 1:
Human cerebellum tissue lysate at 20 µg

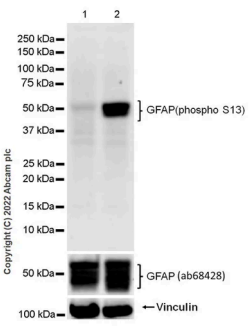
Lane 2:
Human brain tissue lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 49 kDa

Observed band size: 48-50 kDa



Western blot - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Western blot staining using rabbit Anti-GFAP antibody

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 31682229, PMID: 22528834).

All lanes:

Western blot - Anti-GFAP (phospho S13) antibody [EPR25281-65] (ab303560) at 1/1000 dilution

Lane 1:
Untreated U-87 MG (human glioblastoma-astrocytoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
U-87 MG treated with 1ug/ml LPS for 24 hours, then add 100nM Calyculin A for 30 min, whole cell lysate at 20 µg

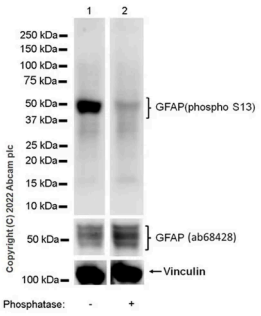
Secondary

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

Predicted band size: 49 kDa

Observed band size: 49 kDa

Exposure time: 70s



Western blot - Anti-GFAP antibody [EPR1034Y] - Astrocyte Marker (ab68428)

GFAP Western blot staining using rabbit Anti-GFAP antibody

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 31682229, PMID: 22528834).

All lanes:
Western blot - Anti-GFAP (phospho S13) antibody [EPR25281-65] (ab303560) at 1/1000 dilution

Lane 1:
U-87 MG (human glioblastoma-astrocytoma epithelial cell) treated with 1 ug/ml LPS for 24 hours, then add 100 nM Calyculin A for 30 min, whole cell lysate (untreated membrane) at 20 µg

Lane 2:
U-87 MG treated with 1 µg/ml LPS for 24h, then add 100 nM Calyculin A for 30 min, (phosphatase treated membrane), whole cell lysate at 20 µg

Secondary

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

Predicted band size: 49 kDa

Observed band size: 35 kDa, 55 kDa, 50 kDa

Exposure time: 70s

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