

Anti-NeuN antibody [EPR12763] - Neuronal Marker

Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487) is a rabbit monoclonal antibody detecting NeuN in **Western Blot, Flow Cytometry (Intra), IHC-P, IHC-Fr, ICC/IF, mIHC**. Suitable for **Cat, Common marmoset, Dog, Human, Mouse, Rat, Sheep, Zebrafish**.

- Multiplex IHC validated on the Leica BOND® MAX using Opal reagents
- Over 1400 publications

Rat, Mouse IgG1 and Mouse IgG2a versions of this clone also available as ab279297, ab279295 and ab279296. Same clone, same staining pattern, different species antibody backbone. Learn more about chimeric antibodies

Lab Essentials

Recombinant

RabMAb

Advanced Validation

20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR12763
Purification technique	Affinity purification Protein A
Concentration	0.8 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	For unpurified use at 1/1000 - 1/2000.

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	For unpurified use at 1/1000 - 1/2000.

Species	Human
Dilution info	1/1000 - 1/10000
Notes	For unpurified use at 1/1000 - 1/2000.

Expected

Species	Zebrafish, Common marmoset, Dog, Cat, Goat, Sheep
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Pig, Cynomolgus monkey
Dilution info	-
Notes	-

mIHC

Tested

Species	Human
Dilution info	1/1000
Notes	Perform Sodium citrate antigen retrieval (pH 6.0) in between rounds of tyramide signal amplification to remove the antibody from the previous round, to avoid any cross-reactivity. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/600
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	Mouse, Zebrafish, Common marmoset, Dog, Cat, Goat, Sheep
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Pig, Cynomolgus monkey
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100 - 1/300
Notes	For unpurified use at 1/80.

Species	Human
Dilution info	1/100 - 1/300
Notes	For unpurified use at 1/80.

Expected

Species	Rat, Zebrafish, Common marmoset, Dog, Cat, Goat, Sheep
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Pig, Cynomolgus monkey
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	Rat, Human, Zebrafish, Common marmoset, Dog, Cat, Goat, Sheep
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Pig, Cynomolgus monkey
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Mouse
Dilution info	1/444

Notes -

Expected

Species Rat, Zebrafish, Common marmoset, Dog, Cat, Goat, Sheep

Dilution info Use at an assay dependent concentration.

Notes -

Predicted

Species Pig, Cynomolgus monkey

Dilution info -

Notes -

IHC (PFA fixed)

Tested

Species Mouse

Dilution info -

Notes -

Expected

Species Rat, Human, Zebrafish, Common marmoset, Dog, Cat, Goat, Sheep

Dilution info Use at an assay dependent concentration.

Notes -

Predicted

Species Pig, Cynomolgus monkey

Dilution info -

Notes -

IHC-P

Tested

Species	Mouse
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Species	Rat
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Species	Zebrafish
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Species	Common marmoset
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Species	Human
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Species	Dog
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Species	Cat
Dilution info	1/3000
Notes	For unpurified use at 1/800.

Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Goat
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Sheep
Dilution info	1/3000
Notes	For unpurified use at 1/800. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Predicted

Species	Pig, Cynomolgus monkey
Dilution info	-
Notes	-

Target data

[See full target information NeuN](#) 

Function	Pre-mRNA alternative splicing regulator. Regulates alternative splicing of RBFOX2 to enhance the production of mRNA species that are targeted for nonsense-mediated decay (NMD).
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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

Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC (PFA fixed), IHC-Fr, IHC-P, WB, mIHC in cat, common marmoset, dog, human, mouse, rat, sheep, zebrafish samples.

Anti-NeuN antibody (anti-RBFOX3 antibody) [EPR12763] - Neuronal Marker (ab177487) has been cited over 868 times in peer reviewed journals and is trusted by the scientific community.

Abcam's high quality manufacturing and validation processes ensure NeuN antigen antibody (ab177487) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487) has 72 independent reviews from customers.

Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487) specifically detects NeuN (UniProt ID: A6NFN3; Molecular weight: 34kDa) 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 EPR12763 - ab209898.

Antibody clone EPR12763 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647, Biotin, Alexa Fluor® 594 (ab190195, ab190565, ab204681, ab207279).

NeuN (RBFOX3) is a protein extensively used as a neuronal marker due to its expression in the nuclei and cytoplasm of neurons. It is vital for the regulation of alternative splicing of pre-mRNA, which is essential for neural development and function. Mutations or dysregulation of RBFOX3 have been associated with various neurological conditions, including autism spectrum disorder, cognitive deficits, and epilepsy, highlighting its importance in maintaining normal brain function.

Browse our curated portfolio of extensively validated antibodies and assays, with antibodies to over 90% of key targets in major glioblastoma pathways– including EGF, VEGF, MAPK, Wnt, NFkB, and PI3K/Akt/MTOR – all in one place.

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	NeuN also known as Fox-3 is a protein often utilized as a neuronal marker due to its expression predominantly in neurons. The molecular weight of NeuN is approximately 46-48 kDa. It is located in the nucleus and in the post-mitotic neurons of the central nervous system. Research frequently uses anti-NeuN antibodies for identifying neuronal cells in various samples capitalizing on its reliable expression profile across diverse neuron types. Common techniques for detecting NeuN include Western blot and immunohistochemistry (IHC) with NeuN staining being a definitive method for confirming neuronal identity.
Biological function summary	NeuN plays a role in RNA splicing specific to neurons contributing to the regulation of gene expression within the nervous system. It does not function as part of a larger protein complex but interacts with chromatin to influence neuronal gene expression. This has implications for neuronal differentiation and maintenance. Techniques like NeuN IHC use antibodies such as Alexa Fluor 568 conjugated variants to visualize neurons in tissue confirming its utility as an accessible and specific neuronal marker in research.
Pathways	NeuN serves an important function in neuronal development and differentiation. It particularly influences neurogenesis and synaptogenesis pathways where neuron-specific splicing and transcriptional regulation are essential. Although NeuN does not directly engage in pathways with other proteins because it operates independently its expression parallels the activity of significant neuronal proteins such as MAP2 and Neurofilaments. These relationships illustrate NeuN's indirect association in pathways promoting neuronal development and maintenance.
Associated diseases and disorders	NeuN remains significant in studies of neurodegenerative diseases and neuronal damage. For instance decreased NeuN staining has been observed in Alzheimer's disease indicating loss of neuronal identity or survival. Research also notes alterations in NeuN expression following ischemic injury where its presence or absence links to neuronal viability. NeuN's association with these states of neuronal health or pathology highlights its relevance as a marker in neurodegenerative and injury-related disorders. Furthermore while not directly in disease pathways NeuN functionally intersects with proteins like Tau in Alzheimer's suggesting its indirect role in disease pathways.

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

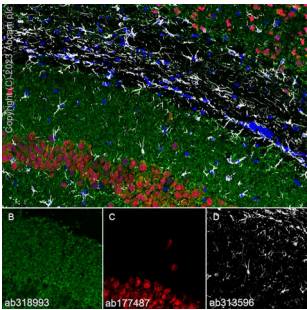
We do not recommend this combination. It is not covered by our product promise.

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.

32 product images



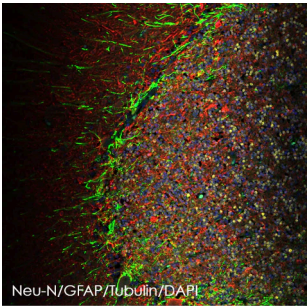
Immunohistochemistry (Frozen sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Frozen sections) staining of Mouse hippocampus (fresh frozen) using rabbit Anti-NeuN antibody

Immunohistochemical analysis of 4% PFA-fixed 0.2% Triton X-100 permeabilized frozen Mouse hippocampus (fresh frozen) tissue labeling MAP2 with [ab318993](#) at 1/2000 (0.486 ug/ml) dilution followed by [ab150169](#) Goat Anti-Chicken IgY H&L (Alexa Fluor® 488) at 1/1000 (2 ug/mL) dilution (Green).

Panel A: merged staining of anti-MAP2 ([ab318993](#) green), anti-NeuN ([ab177487](#) red) and anti-GFAP ([ab313596](#) grey) on mouse hippocampus.
Panel B: anti-MAP2 stained on mouse hippocampus.
Panel C: anti-NeuN stained in neuron of mouse hippocampus.
Panel D: anti-GFAP stained in astrocytes of mouse hippocampus.
The nuclear counterstain was DAPI (Blue). The section was incubated with [ab318993](#) [ab177487](#) and [ab313596](#) 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).

Secondary antibody control: Secondary antibody is [ab150169](#) Goat Anti-Chicken IgY H&L (Alexa Fluor® 488) at 1/1000 (2 ug/mL) dilution.



Multiplex immunohistochemistry - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Multiplex immunohistochemistry staining using rabbit Anti-NeuN antibody

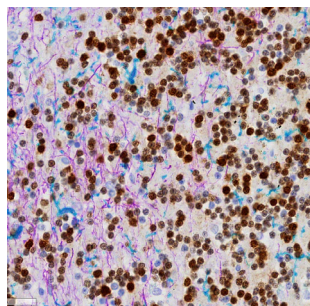
Fluorescence multiplex immunohistochemical analysis of human cerebellum tissue (formalin-fixed paraffin-embedded section).
Merged staining of Neu-N ([ab177487](#); yellow; Opal™570), anti-beta III Tubulin ([ab52623](#); red; Opal™690) and anti-GFAP ([ab68428](#); green; Opal™520).

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.

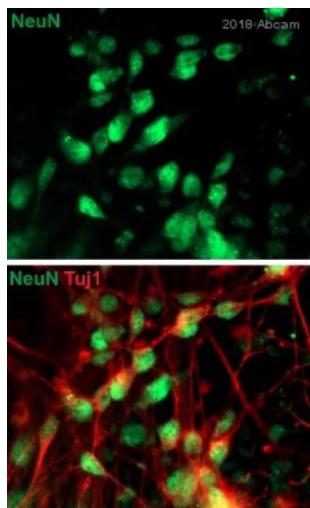


Multiplex immunohistochemistry - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Multiplex immunohistochemistry staining using rabbit Anti-NeuN 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 Chromomaps DAB kit, Discovery purple or Discovery teal chromogens and haematoxylin II counterstain.

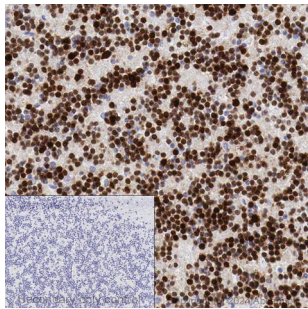


Immunocytochemistry/ Immunofluorescence - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunocytochemistry/ Immunofluorescence staining of human neurons using rabbit Anti-NeuN antibody

Immunocytochemistry/immunofluorescence analysis of human neurons differentiated from iPSCs labelling NeuN (green) with ab177487 at 1/500 in 0.1% TritonX-100 1% goat serum 1X PBS for 16 hours at 4°C. Cells were fixed with paraformaldehyde and permeabilized with 0.5% Triton X-100. Then cells were blocked with 5% serum for 20 minutes at 23°C. Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) ([ab150077](#)) at 1/1000 dilution was used as the secondary antibody. Tuj1 antibody was used to stain neuronal dendrites and axons (red).

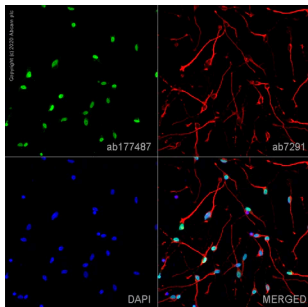
This image is courtesy of a customer review submitted by Vladimir Milenkovic



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of human cerebellum tissue using rabbit Anti-NeuN antibody

Immunohistochemical analysis of formalin fixed paraffin embedded human cerebellum labelling NeuN with ab177487 at a dilution of 1/500. 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. ab177487 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.

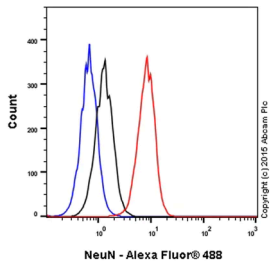


Immunocytochemistry/ Immunofluorescence - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NeuN antibody

Immunofluorescence staining of NeuN using ab177487 in ioGlutamatergic Neurons (Human iPSC-Derived Glutamatergic Neurons, [ab259259](#)), which were differentiated for 1 day post induction. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% PBS-Tween 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 ab177487 at 1 µg/ml and [ab7291](#), Mouse monoclonal [DM1A] to alpha Tubulin, 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 [ab150120](#), Goat Anti-Mouse IgG 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.



Flow Cytometry (Intracellular) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

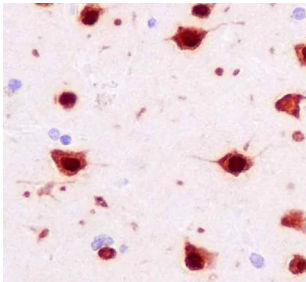
NeuN Flow Cytometry (Intracellular) staining of U-87 MG (Human glioblastoma-astrocytoma epithelial cell line) cells using rabbit Anti-NeuN antibody

Overlay histogram showing U-87 MG (Human glioblastoma-astrocytoma epithelial cell line) cells stained with ab177487 (red line).

The cells were fixed with 80% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab177487 1/100 dilution) for 30 minutes at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150081) at 1/2000 dilution for 30 minutes at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (ab172730 1µg/1x10⁶ cells used under the same conditions. Unlabeled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.

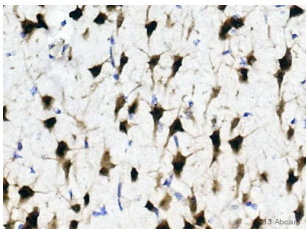
Alexa Fluor® 488 (ab190195) and Alexa Fluor® 647 (ab190565) conjugated versions are available for this clone.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of human gliocytoma tissue using rabbit Anti-NeuN antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human gliocytoma tissue labelling NeuN with ab177487 at 1/3000 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Counterstained with Hematoxylin.

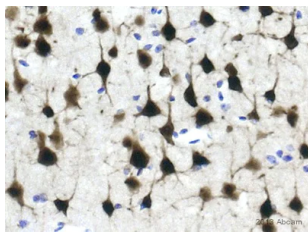


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of sheep brain tissue using rabbit Anti-NeuN antibody

IHC-P image of FOX3/NeuN staining on sheep brain (Frontal cortex) sections using ab177487 (1/1000 dilution). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/1000 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250 dilution).

This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

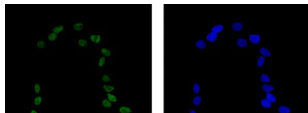


This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of mouse brain (frontal cortex) tissue using rabbit Anti-NeuN antibody

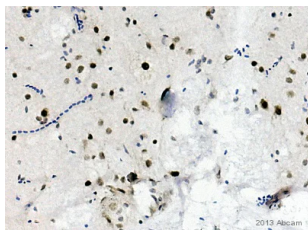
IHC-P image of FOX3/NeuN staining on mouse brain (frontal cortex) sections using ab177487 (1/800 dilution). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/800 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250 dilution).



Immunocytochemistry/ Immunofluorescence - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunocytochemistry/ Immunofluorescence staining of SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells using rabbit Anti-NeuN antibody

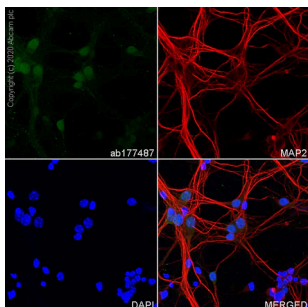
Immunocytochemistry/Immunofluorescence analysis of SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells labeling NeuN (green) with ab177487 at 1/300 dilution. Cells were fixed with 4% paraformaldehyde. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/200 dilution) was used as the secondary antibody. Counterstained with DAPI (blue).



This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

IHC-P image of FOX3/NeuN staining on zebrafish spinal cord sections using ab177487 (1/500). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/500 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250).

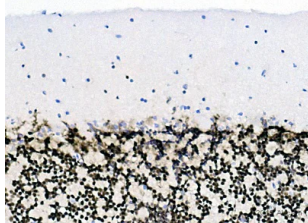


Immunocytochemistry/ Immunofluorescence - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

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

Immunocytochemistry/immunofluorescence analysis of Mouse primary neuron cells labelling NeuN with ab177487 at 1/100. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 was used as the secondary antibody (green). Cells were counterstained with Anti-MAP2 mouse monoclonal antibody (ab11267) at 1/200 dilution and visualised using Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) at 1/1000 dilution (red). Nuclear DNA was labelled with DAPI (blue).

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



This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

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

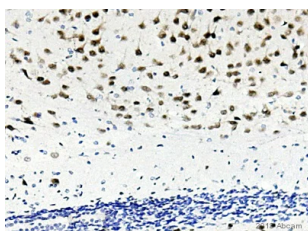
IHC-P image of FOX3/NeuN staining on cat cerebellum sections using ab177487 (1/1000 dilution). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/1000 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250 dilution).



Immunohistochemistry (PFA fixed) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (PFA fixed) staining using rabbit Anti-NeuN antibody

NeuN antibody ab177487 was used with Tissue Clearing Kit [ab243298](#) to penetrate, stain and clear a 1 mm coronal section of mouse brain. Blue: DAPI, Green: NeuN. Learn more about tissue clearing kits, reagents, and protocols designed to make it easier to stain thick tissue sections and get more data from each valuable tissue section. For 1 mm brain sections, we recommend a starting dilution of 1:200, and also using Goat Anti-Rabbit IgG H&L AlexaFluor488 ([ab150077](#)) at a dilution of 1:400.

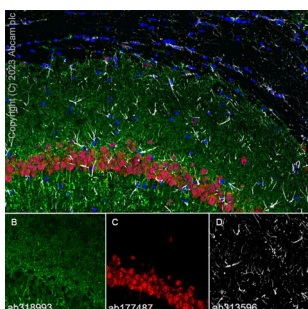


This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

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

IHC-P image of FOX3/NeuN staining on rat brain (SVZ) sections using ab177487 (1/2000). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/2000 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250).



Immunohistochemistry (Frozen sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Frozen sections) staining of Rat hippocampus (fresh frozen) using rabbit Anti-NeuN antibody

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat hippocampus (fresh frozen) tissue labeling MAP2 with [ab318993](#) at 1/2000 (0.486 ug/ml) dilution followed by [ab150169](#) Goat Anti-Chicken IgY H&L (Alexa Fluor® 488) at 1/1000 2 ug/mL dilution (Green).

Panel A: merged staining of anti-MAP2 ([ab318993](#), green), anti-NeuN (ab177487, red) and anti-GFAP ([ab313596](#), grey) on rat hippocampus.

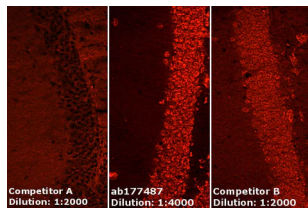
Panel B: anti-MAP2 stained on rat hippocampus.

Panel C: anti-NeuN stained in neuron of rat hippocampus.

Panel D: anti-GFAP stained in astrocytes of rat hippocampus.

The nuclear counterstain was DAPI (Blue). The section was incubated with [ab318993](#), [ab177487](#) and [ab313596](#) 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).

Secondary antibody control: Secondary antibody is [ab150169](#) Goat Anti-Chicken IgY H&L (Alexa Fluor® 488) at 1/1000 2 ug/mL dilution.



Immunohistochemistry (Frozen sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

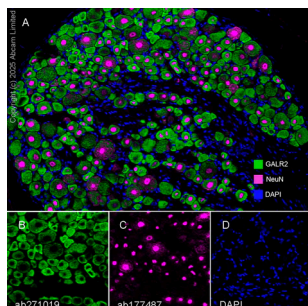
NeuN Immunohistochemistry (Frozen sections) staining using rabbit Anti-NeuN antibody

An independent comparison of commercially available NeuN clones in IHC-Fr (acetone-fixed mouse dentate gyrus sections).

Competitor A: Leading mouse monoclonal.

Competitor B: Non-Abcam rabbit monoclonal.

ab177487 produces intense, specific staining with minimal background, even at half the dilution of competing antibodies.



Multiplex immunohistochemistry - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Multiplex immunohistochemistry staining of Rat dorsal root ganglia using rabbit Anti-NeuN antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded rat dorsal root ganglia staining GALR2 with [ab271019](#) at a 1/2000 dilution and ab177487 anti-NeuN used at 1/300 dilution.

Panel A: merged staining of anti-GALR2 (green; Opal™520) and anti-NeuN (magenta; Opal™570) on Rat dorsal root ganglia.

Panel B: anti-GALR2 stained on cytoplasm of neurons.

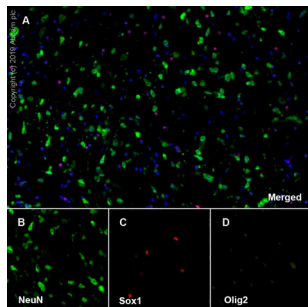
Panel C: anti-NeuN stained on nucleus and cytoplasm of neurons.

Panel D: Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in two rounds of staining: in the order of [ab271019](#) and ab177487 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 was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse cerebrum tissue labelling NeuN with ab177487 at 1/100 dilution (B), SOX1 with [ab242125](#) at 1/100 dilution (C) and Olig2 with [ab109186](#) at 1/100 dilution (D). Anti-Rabbit and Mouse Polymer HRP was used as a secondary antibody, and DAPI was used for a nuclear counter stain. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins. Heat mediated antigen retrieval (Leica ER2, PH9.0, 20 minutes) was used in between rounds of tyramide signal amplification to remove the antibodies from the previous round, to avoid any cross-reactivity.

Panel A: merged staining of anti- NeuN (green, Opal™520), anti-SOX1 (red, Opal™570) and anti-Olig2 (yellow, Opal™690).

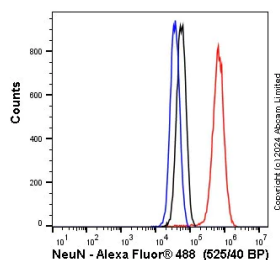
Panel B: anti-NeuN stained for neurons.

Panel C: anti-SOX1 stained on neural progenitors.

Panel D: anti-Olig2 stained on oligodendrocyte.

The section was incubated in three rounds of staining: in the order of ab177487, [ab242125](#) and [ab109186](#) 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.



Flow Cytometry (Intracellular) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Flow Cytometry (Intracellular) staining of Neuro-2a cells using rabbit Anti-NeuN antibody

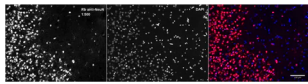
Flow cytometry overlay histogram showing Neuro-2a cells stained with ab177487 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab177487) (1x 10⁶ in 100 μl at 5.0 μg/ml (1/444)) for 30 min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30 min at 22°C

Isotype control antibody (black line) was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

This antibody gave a positive signal in Neuro-2a Fixed with 80% methanol (5 min) / permeabilised with 0.1% PBS-Triton X-100 for 15 min under the same conditions.

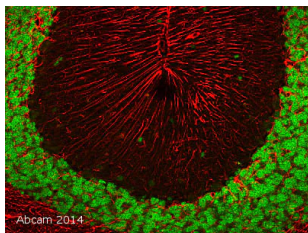


This image is courtesy of a customer review submitted by Eva Borger

Immunohistochemistry (Frozen sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Frozen sections) staining of mouse brain tissue using rabbit Anti-NeuN antibody

ab177487 staining NeuN in mouse brain tissue sections by Immunohistochemistry (IHC-Fr - frozen sections). Tissue was fixed with formaldehyde and blocked with Triton X-100 + 0.4% horse serum for 30 minutes at 20°C. Samples were incubated with primary antibody (1/500 in blocking solution) for 16 hours at 4°C. An Alexa Fluor® 594-conjugated donkey anti-rabbit IgG polyclonal (1/200) was used as the secondary antibody.



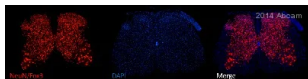
This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

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

IHC-P image of NeuN (green) and GFAP (red) double staining on mouse cerebellum sections using ab177487 (1/5000) and [ab4674](#) (1/1500) respectively.

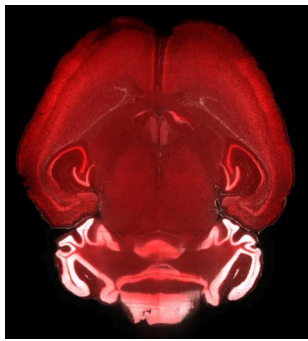
The sections were deparaffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were then incubated with Rabbit Monoclonal to NeuN (ab177487) diluted at 1/5000 and Chicken Polyclonal to GFAP ([ab4674](#)) diluted at 1/1500. The primary antibody was detected using [ab150097](#) Goat anti-rabbit IgG conjugated to Alexa Fluor® 488 (1/500) and [ab150176](#) Goat anti-chicken IgY conjugated to Alexa Fluor® 594 (1/500)



This image is courtesy of a customer review submitted by Jianning Lu

Immunohistochemistry (Frozen sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

ab177487 staining NeuN in mouse free floating 50 micron lumbar spinal cord tissue sections by Immunohistochemistry (IHC-Fr - frozen sections). Tissue was fixed with formaldehyde, permeabilized with Triton X-100 and blocked with 10% serum for 2 hours at 25°C. Samples were incubated with primary antibody (1/500 in PBS + Triton) for 16 hours at 4°C. An Alexa Fluor® 594-conjugated donkey anti-rabbit IgG polyclonal (1/700) was used as the secondary antibody.



IHC-tissue clearing - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN IHC-tissue clearing staining of whole mouse brain using rabbit Anti-NeuN antibody

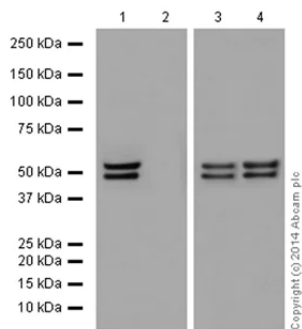
Anti-NeuN ab177487 was used with Tissue clearing kit – CUBIC ([ab316246](#)) and 3D Tissue Staining Kit – CUBIC ([ab316248](#)) to penetrate stain and clear a whole mouse brain.

White: nuclear staining

Red: NeuN.

Learn more about tissue clearing kits reagents and protocols designed to make it easier to stain whole brains and get more data from each valuable tissue sample. For a whole mouse brain we recommend starting with 10 ug of ab177487 and using a Fab fragment secondary antibody with 6.67 µg to create an antibody complex before 3D staining (see protocol for details). Additive A was used during the staining process.

The sample was imaged using a light-sheet microscope.



Western blot - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

Exposure time -

Lane 1-2: 3 minutes.

Lane 3-4: 1 minute.

Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:

Western blot - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487) at 1/10000 dilution

Lane 1:

Human fetal brain tissue lysate at 10 µg

Lane 2:

HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 10 µg

Lane 3:

Mouse brain tissue lysate at 10 µg

Lane 4:

Rat brain tissue lysate at 10 µg

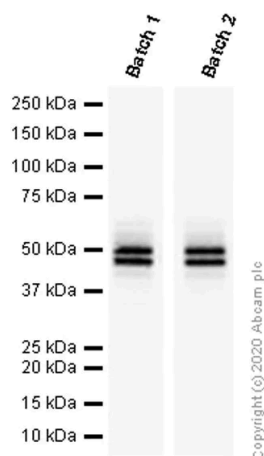
Secondary

All lanes:

Peroxidase conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 34 kDa

Observed band size: 46 kDa, 48 kDa



Western blot - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

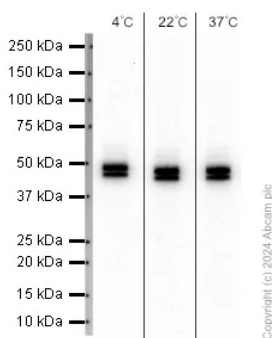
NeuN Western blot staining using rabbit Anti-NeuN antibody

Different batches of ab177487 were tested on mouse brain lysate at 2.0 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 46,48 kDa.

All lanes:

Western blot - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

Predicted band size: 34 kDa



Western blot - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Western blot staining of Mouse brain lysate using rabbit Anti-NeuN antibody

This blot was produced using 4-20% SDS-PAGE containing 15 µg of mouse brain lysate per lane at 150V for 1hr before being transferred onto a 0.45 µm PVDF membrane at 75V for 1hr. The membrane was then blocked for 1hr using 5% NFDm/TBST, then incubated with ab177487 (1/10,000) at room temperature for 1hr. After being washed three times in TBST, the membrane was incubated with Peroxidase conjugated goat anti-rabbit IgG (H+L) ([ab97051](#)) at 1/20,000 dilution for 1hr at room temperature. The membrane was washed three times again. Then the signal was developed using the ECL technique.

ab177487 was stored at a range of temperatures (+4°C, +22°C, +37°C) for 1 week before being tested in WB. The image shows the band intensity remains relatively constant across all storage temperatures, demonstrating that antibody activity is not affected under these conditions. This data was generated as part of a structured antibody stability study supporting Abcam's transition from cold-chain to ambient shipping.

All lanes:

Western blot - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487) at 1/10000 dilution

All lanes:

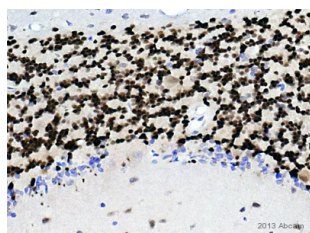
Mouse brain lysate at 15 µg with NDFM/TBST

Secondary

All lanes:

Western blot - Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

Exposure time: 3s

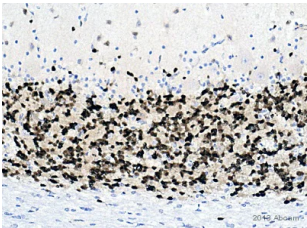


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

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

IHC-P image of FOX3/NeuN staining on marmoset cerebellum sections using ab177487 (1/2000). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/2000 and

This image is courtesy of a customer review submitted by Carl Hobbs,

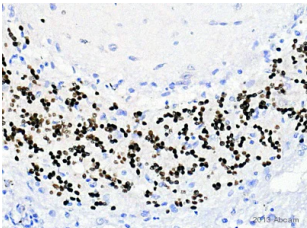


This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of goat cerebellum tissue using rabbit Anti-NeuN antibody

IHC-P image of FOX3/NeuN staining on goat cerebellum sections using ab177487 (1/500 dilution). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/500 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250 dilution).

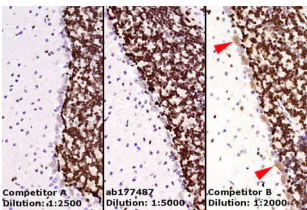


This image is courtesy of a customer review submitted by Carl Hobbs, Kings's College London, United Kingdom.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

NeuN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of dog cerebellum tissue using rabbit Anti-NeuN antibody

IHC-P image of FOX3/NeuN staining on dog cerebellum sections using ab177487 (1/500 dilution). Sections were de-paraffinized and subjected to heat mediated antigen retrieval using citric acid. The sections were blocked using 1% BSA for 10 minutes at 21°C. ab177487 was diluted 1/500 and incubated with the sections for 2 hours at 21°C. The secondary antibody used was goat polyclonal to rabbit IgG conjugated to biotin (1/250 dilution).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuN antibody [EPR12763] - Neuronal Marker (ab177487)

An independent comparison of commercially available NeuN clones in IHC-P.
Competitor A: Leading mouse monoclonal.

Competitor B: Non-Abcam rabbit monoclonal.

Sodium citrate was used for antigen retrieval in all 3 samples.

ab177487 produces specific staining, equivalent to the leading mouse monoclonal at half the dilution. The non-Abcam mouse monoclonal was less specific as it stained Purkinje cells, which do not express NeuN.

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