abcam

ab315793

Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR26286-56
Purification technique	Affinity purification Protein A
Specificity	Based on an in-house Dot blot test, this product recognizes Nogo A and Nogo D, and does not cross-react with Nogo-B1, Nogo-B2 and Nogo-C.
Concentration	1.003 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

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

Not recommended

Species	Human, Rat, Transfected cell lysate - Mouse
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat, Human, Transfected cell lysate - Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat, Human, Transfected cell lysate - Mouse

Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Human, Rat, Transfected cell lysate - Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Human, Rat, Transfected cell lysate - Mouse
Dilution info	-
Notes	-

Dot

Tested

Species	Transfected cell lysate - Mouse
Dilution info	-

Notes	-

Expected

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

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

Target data

See full target information Rtn4

Function

Required to induce the formation and stabilization of endoplasmic reticulum (ER) tubules. They regulate membrane morphogenesis in the ER by promoting tubular ER production. They influence nuclear envelope expansion, nuclear pore complex formation and proper localization of inner nuclear membrane proteins. However each isoform have specific functions mainly depending on their tissue expression specificities. Isoform A. Developmental neurite growth regulatory factor with a role as a negative regulator of axon-axon adhesion and growth, and as a facilitator of neurite branching. Regulates neurite fasciculation, branching and extension in the developing nervous system (PubMed:20573699). Involved in down-regulation of growth, stabilization of wiring and restriction of plasticity in the adult CNS (By similarity). Regulates the radial migration of cortical neurons via an RTN4R-LINGO1 containing receptor complex (PubMed:20573699). Acts as a negative regulator of central nervous system angiogenesis. Inhibits spreading, migration and sprouting of primary brain microvascular endothelial cells (MVECs). Also induces the retraction of MVECs lamellipodia and filopodia in a ROCK pathway-dependent manner (PubMed:23625008). Isoform B. Mainly function in endothelial cells and vascular smooth muscle cells, is also involved in immune system regulation (Probable). Modulator of vascular remodeling, promotes the migration of endothelial cells but inhibits the migration of vascular smooth muscle cells (PubMed:15034570). Regulates endothelial sphingolipid biosynthesis with direct effects on vascular function and blood pressure. Inhibits serine palmitoyltransferase, SPTLC1, the rate-limiting enzyme of the novo sphingolipid biosynthetic pathway, thereby controlling production of endothelial sphingosine-1-phosphate (S1P) (PubMed:26301690). Required to promote macrophage homing and functions such as cytokine/chemokine gene expression involved in angiogenesis, arteriogenesis and tissue repair (PubMed:19805174). Mediates ICAM1 induced transendothelial migration of leukocytes such as monocytes and

neutrophils and acute inflammation (PubMed:21183689). Necessary for immune responses triggered by nucleic acid sensing TLRs, such as TLR9, is required for proper TLR9 location to endolysosomes (PubMed:25917084). Also involved in immune response to LPS (PubMed:26174362). Plays a role in liver regeneration through the modulation of hepatocytes proliferation (PubMed:23299899). Reduces the anti-apoptotic activity of Bcl-xl and Bcl-2. This is likely consecutive to their change in subcellular location, from the mitochondria to the endoplasmic reticulum, after binding and sequestration. With isoform C, inhibits BACE1 activity and amyloid precursor protein processing (By similarity). Isoform C. Regulates cardiomyocyte apoptosis upon hypoxic conditions (PubMed:27763637). With isoform B, inhibits BACE1 activity and amyloid precursor protein processing (By similarity).

Storage

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

Notes

ab315793 is the carrier-free version of ab315792.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody

preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Nogo A also known as Reticulon 4-A (RTN4-A) and Nogo D are part of the Nogo protein family. Nogo A is a 200 kDa protein while Nogo D is smaller around 37 kDa. These proteins are mainly expressed in the central nervous system particularly in the oligodendrocytes and neurons. Mechanically they are involved in the inhibition of axonal growth and neural regeneration functioning as a myelin-associated protein. The protein structure consists of three main regions: N-terminal central domain and a long C-terminal domain each contributing differently to its inhibitory functions.
Biological function summary	Nogo A and Nogo D are important for maintaining neural network stability. They belong to the larger reticulon protein family which forms part of the endoplasmic reticulum network. Nogo A binds to specific receptors such as Nogo receptor 1 (NgR1) to mediate growth inhibition. This interaction causes a signaling cascade that limits neuronal sprouting and potentially stabilizes synapses. Nogo D's biological role is less defined but suggests involvement in modulating similar pathways as Nogo A.
Pathways	Nogo A plays a significant role in neural inhibition and recovery processes. It integrates into the RhoA/ROCK signaling pathway which influences cytoskeletal dynamics and axonal growth inhibition. This protein works with others like RhoA GTPase within this pathway to execute its functions. Additionally Nogo A interacts with MAG and OMgp proteins through shared receptors further impacting neuronal growth and recovery after injuries.
Associated diseases and disorders	Nogo A and Nogo D have prominent roles in conditions such as multiple sclerosis (MS) and spinal cord injuries. Nogo A limits axonal regeneration and remyelination in MS often in interaction with myelin-associated inhibitors like MAG restricting neuronal recovery. In spinal cord injuries the presence of Nogo A is closely associated with limited neural repair connecting it with proteins part of the glial scar formation. These interactions highlight the potential of targeting Nogo proteins for therapeutic purposes in regenerative medicine.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

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

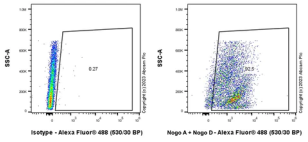
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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10 product images

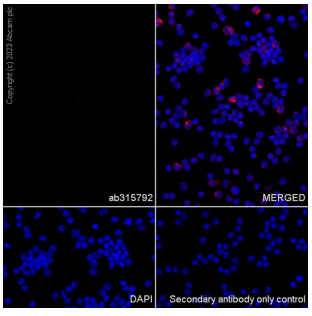


Flow Cytometry (Intracellular) - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary neuron cells labelling Nogo A + Nogo D with ab315792 at 1/500 dilution (0.1 ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control.

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



Immunocytochemistry/ Immunofluorescence - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

Nogo A + Nogo D Immunocytochemistry/ Immunofluorescence staining of Mouse splenocytes using rabbit Anti-Nogo A + Nogo D antibody

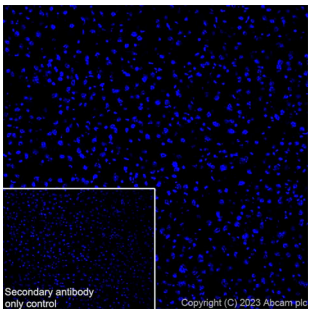
This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized mouse splenocytes cells labelling Nogo A + Nogo D with ab315792 at 1/1000 (0.502 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/mL) dilution (Green).

Negative control: Confocal image showing no staining in mouse splenocytes (PMID: 11978832). Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

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



Immunohistochemistry (Frozen sections) - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

Nogo A + Nogo D Immunohistochemistry (Frozen sections) staining of Mouse liver (fresh frozen) using rabbit Anti-Nogo A + Nogo D antibody

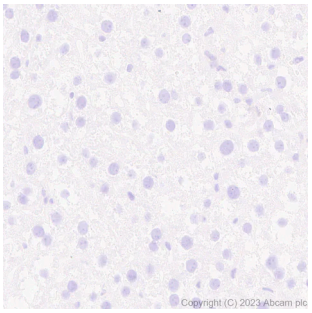
This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse liver (fresh frozen) tissue labeling Nogo A + Nogo D with ab315792 at 1/500 (1.004 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution (Green).

Negative control: confocal image showing no staining on mouse liver. The section was incubated with ab315792 for 60 mins at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

The nuclear counterstain was DAPI (Blue).

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

Nogo A + Nogo D Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse liver using rabbit Anti-Nogo A + Nogo D antibody

This data was developed using ab315792, the same antibody clone in a different buffer formulation.

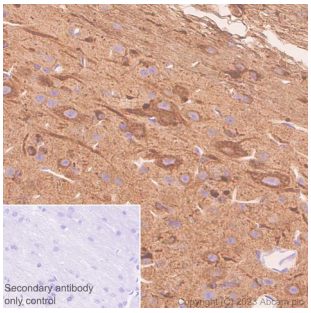
Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling Nogo A + Nogo D with ab315792 at 1/4000 (0.126 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: No staining on mouse liver.
The section was incubated with ab315792 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.
Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background.

Counterstained with Hematoxylin.

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

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Mouse spinal cord tissue labeling Nogo A + Nogo D with ab315792 at 1/4000 (0.126 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

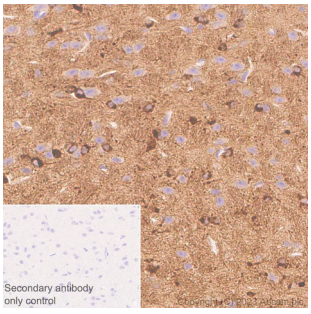
Positive staining on mouse spinal cord (PMID: 15751227).
The section was incubated with ab315792 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.
Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background.

Counterstained with Hematoxylin.

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

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling Nogo A + Nogo D with ab315792 at 1/4000 (0.126 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

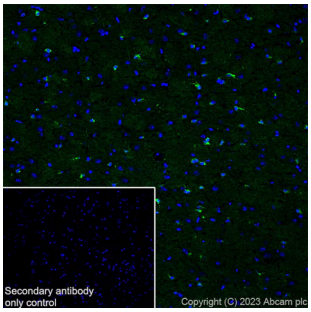
Positive staining on mouse cerebrum (PMID: 17356385).
The section was incubated with ab315792 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.
Incubate slides with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background.

Counterstained with Hematoxylin.

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

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

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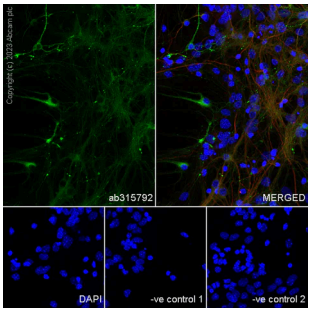
Immunohistochemistry (Frozen sections) - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse cerebrum (fresh frozen) tissue labeling Nogo A + Nogo D with ab315792 at 1/500 (1.004 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution (Green).

Confocal image showing positive staining on mouse cerebrum. The nuclear counterstain was DAPI (Blue). The section was incubated with ab315792 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 ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 (2 ug/mL) dilution.



Immunocytochemistry/ Immunofluorescence - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

Nogo A + Nogo D Immunocytochemistry/ Immunofluorescence staining of Mouse primary neural/glia cell using rabbit Anti-Nogo A + Nogo D antibody

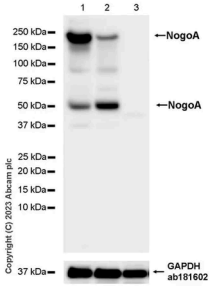
This data was developed using ab315792, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized mouse primary neural/glia cell cells labelling Nogo A + Nogo D with ab315792 at 1/1000 (0.502 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/mL) dilution (Green).

Confocal image showing cytoplasmic staining in mouse primary neural/glia cell.
Confocal scanning Z step was set as 0.3 µm followed by image processing with maximum Z projection.
Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

ab11267 Anti-MAP2 mouse monoclonal antibody was used to counterstain at 1/500 (4ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

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



Western blot - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

Nogo A + Nogo D Western blot staining using rabbit Anti-Nogo A + Nogo D antibody

This data was developed using ab315792, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Negative control: liver (PMID: 11978832).

The molecular weight observed is consistent with what has been described in the literature (PMID: 27786289).

The bands between 50 kDa and 200 kDa are likely to be degraded target fragments.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.
All lanes:
Western blot - Anti-Nogo A + Nogo D antibody [EPR26286-56] (ab315792) at 1/1000 dilution

Lane 1:
Mouse brain tissue lysate at 50 µg

Lane 2:
Mouse spinal cord tissue lysate at 50 µg

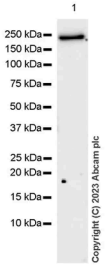
Lane 3:
Mouse liver tissue lysate at 50 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 50 kDa, 200 kDa, 36 kDa

Exposure time: 15s



Western blot - Anti-Nogo A + Nogo D antibody [EPR26286-56] - BSA and Azide free (ab315793)

Nogo A + Nogo D Western blot staining of Mouse testis tissue lysate using rabbit Anti-Nogo A + Nogo D antibody

This data was developed using ab315792, the same antibody clone in a different buffer formulation.
Lysate was freshly made and used for Western blotting immediately to minimize protein degradation.

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

All lanes:
Western blot - Anti-Nogo A + Nogo D antibody [EPR26286-56] (ab315792) at 1/1000 dilution

All lanes:
Mouse testis tissue lysate at 20 µg

Secondary

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

Observed band size: 200 kDa

Exposure time: 70s

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