abcam

ab177953

Anti-Nogo antibody [EPR12266]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR12266
Purification technique	Affinity purification Protein A
Specificity	The immunogen used for this product shares high homology with RTN1 (89%), RTN2 (78%), and RTN3 (78%). Cross-reactivity with RTN1, RTN2, and RTN3 has not been confirmed experimentally.
Concentration	1.322 - 1.365 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human, Rat, Mouse
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/5000
Notes	-

Predicted

Species	Rat, Mouse
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Rat, Mouse
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Rat, Mouse
Dilution info	-
Notes	-

Target data

See full target information RTN4

Function

Required to induce the formation and stabilization of endoplasmic reticulum (ER) tubules (PubMed:24262037, PubMed:25612671, PubMed:27619977). They regulate membrane morphogenesis in the ER by promoting tubular ER production (PubMed:24262037, PubMed:25612671, PubMed:27619977, PubMed:27786289). They influence nuclear envelope expansion, nuclear pore complex formation and proper localization of inner nuclear membrane proteins (PubMed:26906412). However each isoform have specific functions mainly depending on their tissue expression specificities (Probable). 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. Involved in down-regulation of growth, stabilization of wiring and restriction of plasticity in the adult CNS (PubMed:10667797, PubMed:11201742). Regulates the radial migration of cortical neurons via an RTN4R-LINGO1 containing receptor complex (By similarity). 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 (By similarity). 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. 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). Required to promote macrophage homing and functions such as cytokine/chemokine gene expression involved in angiogenesis, arteriogenesis and tissue repair. Mediates ICAM1 induced transendothelial migration of leukocytes such as monocytes and neutrophils and acute inflammation. Necessary for immune responses triggered by nucleic acid sensing TLRs, such as TLR9, is required for proper TLR9 location to endolysosomes. Also involved in immune response to LPS. Plays a role in liver regeneration through the modulation of hepatocytes proliferation (By similarity). 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 (PubMed:11126360). With isoform C,

inhibits BACE1 activity and amyloid precursor protein processing (PubMed:16965550). Isoform C. Regulates cardiomyocyte apoptosis upon hypoxic conditions (By similarity). With isoform B, inhibits BACE1 activity and amyloid precursor protein processing (PubMed:16965550).

Storage

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

Notes

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

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

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

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	The Nogo protein also known as RTN4 or Nogo-A is a member of the reticulon family with an approximate mass of 200 kDa. It is known for its inhibitory role in axonal regeneration acting as a potent neurite outgrowth inhibitor. The Nogo protein is widely expressed in the central nervous system especially in oligodendrocytes and the endoplasmic reticulum of neurons. It is an important target in neurobiology due to its involvement in regulating axonal growth.

Biological function summary	Nogo protein plays a critical role in the central nervous system by maintaining the stability of neuronal circuits and preventing excessive or aberrant plasticity. It achieves this through its association with membrane-bound complexes. The Nogo-A variant in particular interacts with the Nogo receptor (NgR1) complex to mediate its effects on axon outgrowth inhibition. This interaction is important for maintaining neural structural integrity under normal physiological conditions.
Pathways	The Nogo protein is integrated into neurite outgrowth-inhibitory pathways influencing neural connectivity. It participates mainly in the RhoA-ROCK signaling pathway a pathway known for its role in modulating the cytoskeleton and neuronal morphology. Through this pathway Nogo interacts with several proteins including the p75 neurotrophin receptor (p75^NTR) mediating downstream effects on cell shape and motility. The regulation of this pathway is significant for understanding axonal regeneration and growth inhibition.
Associated diseases and disorders	The Nogo protein is relevant in conditions such as spinal cord injury and multiple sclerosis. In spinal cord injuries upregulated Nogo-A expression contributes to the inhibition of axonal regeneration and functional recovery. Similarly in multiple sclerosis Nogo protein's interaction with the myelin-associated inhibitors may exacerbate damage or delay in repair linked with impaired oligodendrocyte function. This connection highlights the potential therapeutic importance of targeting Nogo interactions to promote neurological recovery and repair.

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

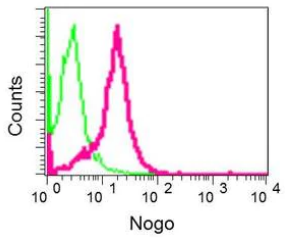
We do not recommend this combination. It is not covered by our product promise.

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.

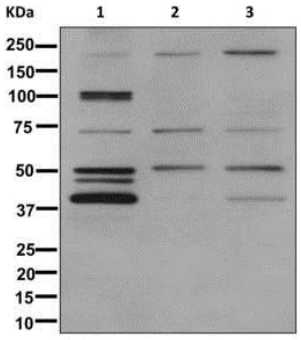
2 product images



Flow Cytometry (Intracellular) - Anti-Nogo antibody [EPR12266] (ab177953)

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

Intracellular flow cytometric analysis of permeabilized U87-MG cells labeling Nogo with ab177953 at 1/100 dilution (red) or a rabbit IgG (negative) (green).



Western blot - Anti-Nogo antibody [EPR12266] (ab177953)

All lanes:
Western blot - Anti-Nogo antibody [EPR12266] (ab177953) at 1/1000 dilution

Lane 1:
U87-MG cell lysate at 10 µg

Lane 2:
SH-SY5Y cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 129 kDa

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