abcam

ab315814

Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR28784-63
Purification technique	Affinity purification Protein A
Concentration	0.512 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat, Synthetic peptide - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/5000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat, Synthetic peptide - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat, Synthetic peptide - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat, Synthetic peptide - Human
Dilution info	-
Notes	-

I-ELISA

Tested

Species	Synthetic peptide - Human
Dilution info	1000 ng/mL
Notes	-

Expected

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

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat, Synthetic peptide - Human
Dilution info	-
Notes	-

Target data

See full target information NEFL

Function	Neurofilaments usually contain three intermediate filament proteins: NEFL, NEFM, and NEFH which are involved in the maintenance of neuronal caliber. May additionally cooperate with the neuronal intermediate filament proteins PRPH and INA to form neuronal filamentous networks (By similarity).

Storage

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

Notes

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

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

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

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	The 68kDa Neurofilament also known as NF-L (C-term) is a critical component of the cytoskeleton in neurons. It has a mass of approximately 68 kilodaltons and is expressed primarily in the central and peripheral nervous systems. As the smallest neurofilament protein NF-L plays a significant role in maintaining neuronal caliber by assembling into intermediate filaments. These networks of filaments provide structural support to neurons which is essential for proper nerve cell function and stability.
Biological function summary	68kDa Neurofilament integrates into a complex with other neurofilament proteins such as NF-M and NF-H to form mature neurofilament structures. These filaments are necessary for axonal transport influencing the distribution of organelles and proteins along the axon. The proper function of these complexes is essential for nerve conduction and integrity impacting axonal geometry directly which is critical for sustaining efficient neuronal signaling and plasticity in the nervous system.
Pathways	The 68kDa Neurofilament is central to the neurofilament signaling and axonal transport pathways. These pathways regulate axonal caliber and contribute to efficient neurotransmission. It interacts closely with other cytoskeletal proteins and motor proteins such as kinesin which supports the movement of cellular components within axons. This transport mechanism is important for normal neuronal function and adaptation to signals affecting the overall communication within neural networks.
Associated diseases and disorders	Aberrations in the 68kDa Neurofilament are linked to neurodegenerative conditions like Amyotrophic Lateral Sclerosis (ALS) and Charcot-Marie-Tooth disease. In ALS misregulation of neurofilament proteins including NF-L leads to axonal transport disruptions and neuronal death. NF-L abnormalities also are associated with Charcot-Marie-Tooth disease where mutations in the gene encoding this protein disturb normal filament assembly and function contributing to peripheral neuropathy. Changes in neurofilament interactions with proteins like peripherin can exacerbate these disorders highlighting their role in disease progression and serving as potential targets for therapeutic interventions.

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.

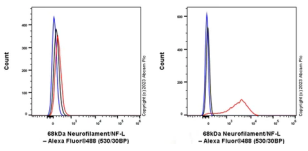
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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8 product images

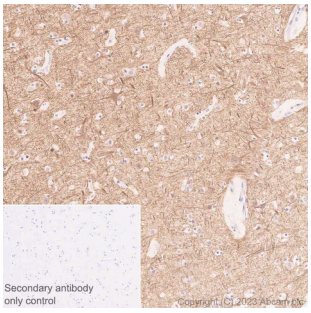


Flow Cytometry (Intracellular) - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized BxPC-3 (human pancreas adenocarcinoma epithelial cell, Left) / SK-N-BE(2) (human neuroblastoma neuroblast, Right) cells labelling 68kDa Neurofilament/NF-L (C-term) with ab315814 at 1/500 dilution (0.1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

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

Low expression: BxPC-3.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

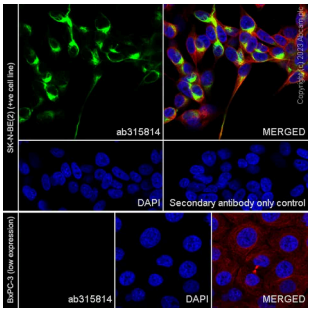
Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling 68kDa Neurofilament/NF-L (C-term) with ab315814 at 1/5000 (0.102 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human cerebrum (PMID: 34557955).
The section was incubated with ab315814 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

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

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



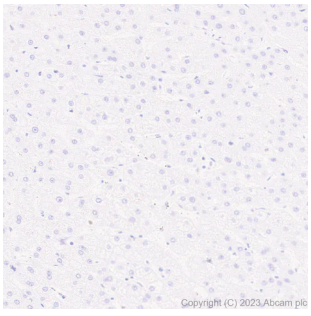
Immunocytochemistry/ Immunofluorescence - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized SK-N-BE(2) (human neuroblastoma neuroblast) cells labelling 68kDa Neurofilament/NF-L (C-term) with ab315814 at 1/500 (2.046 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 SK-N-BE(2) cell line.
Low expreesion: BxPC-3.
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 (Formalin/PFA-fixed paraffin-embedded sections) - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

68kDa Neurofilament/NF-L (C-term) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver using rabbit Anti-68kDa Neurofilament/NF-L (C-term) antibody

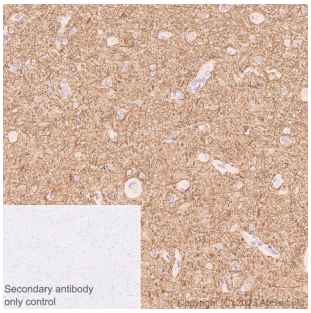
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling 68kDa Neurofilament/NF-L (C-term) with ab315814 at 1/5000 (0.102 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on human liver (PMID: 2420946).
The section was incubated with ab315814 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

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

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

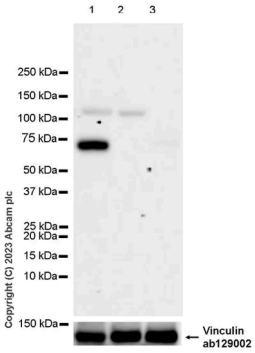
Immunohistochemical analysis of paraffin-embedded Human Alzheimer's disease cerebrum tissue labeling 68kDa Neurofilament/NF-L (C-term) with ab315814 at 1/5000 (0.102 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on cerebrum of human Alzheimer's disease.
The section was incubated with ab315814 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

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

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



Western blot - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

68kDa Neurofilament/NF-L (C-term) Western blot staining using rabbit Anti-68kDa Neurofilament/NF-L (C-term) antibody

Low expression: BxPC-3, ARPE-19.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

The identity of the higher MW band at approximately 100 kDa is unknown.

In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.

All lanes:
Western blot - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814) at 1/1000 dilution

Lane 1:
SK-N-BE(2) (human neuroblastoma neuroblast) whole cell lysate at 50 µg

Lane 2:
BxPC-3 (human pancreas adenocarcinoma epithelial cell) whole cell lysate at 50 µg

Lane 3:
ARPE-19 (human eye epithelial cell) whole cell lysate at 50 µg

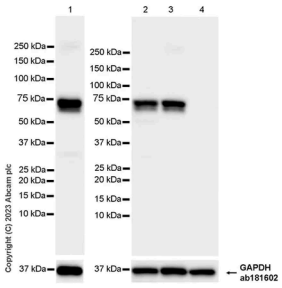
Secondary

All lanes:

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

Observed band size: 70 kDa, 124 kDa

Exposure time: 59s



Western blot - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

68kDa Neurofilament/NF-L (C-term) Western blot staining using rabbit Anti-68kDa Neurofilament/NF-L (C-term) antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Negative control: liver (PMID: 2420946).

The expression profile/ molecular weight observed isconsistent with what has been described in the literature (PMID: 33009465).

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

Exposure time: Lane 1: 1 second, lanes 2-4: 3 seconds.

All lanes:
Western blot - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814) at 1/1000 dilution

Lane 1:
Human brain tissue lysate at 20 µg

Lane 2:
Human spinal cord tissue lysate at 20 µg

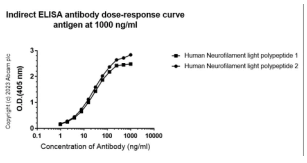
Lane 3:
Human alzheimers brain tissue lysate at 20 µg

Lane 4:
Human liver tissue lysate at 20 µg

Secondary

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

Observed band size: 75 kDa, 36 kDa



Indirect ELISA - Anti-68kDa Neurofilament/NF-L (C-term) antibody [EPR28784-63] (ab315814)

Indirect ELISA analysis of ab315814 at 1000-0 ng/ml. The Secondary antibody used was Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1:2500 dilution.

Antigen: Human Neurofilament light polypeptide 1,Human Neurofilament light polypeptide 2.

Antigen concentration: 1000 ng/ml

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