abcam

ab247580

Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EP2460
Purification technique	Affinity purification Protein A

Reactivity data

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information NEFM

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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot

Notes

ab247580 is a PBS-only buffer format of ab92539. Please refer to ab92539 for recommended dilutions, protocols, and image data.

The production medthod for this product has been changed from hybridoma to recombinant on 1st Sept 2025

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.

Supplementary info

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

Activity summary

	The 160 kD Neurofilament Medium also known as NEFM NF-M or NEF-M belongs to the family of neurofilament proteins. This protein is an important structural component of neurons particularly in the axonal cytoskeleton. Neurofilament Medium has a molecular mass of around 160 kilodaltons (kD). It shows high levels of expression in neuronal tissues contributing to the maintenance of axonal caliber. Commonly research recognizes it alongside other neurofilament proteins emphasizing its role in providing structural integrity to neurons.
Biological function summary	Neurofilament Medium participates in the formation of a stable network of neurofilaments within neurons. Acting as a part of the intermediate filament protein family it forms a complex with other neurofilaments such as NF-L and NF-H. This complex supports neuron structure and plays an important role in axonal transport. The heteropolymeric nature of neurofilaments contributes to their mechanical stability facilitating essential neuronal functions by aligning neurofilaments along the axon.
Pathways	Neurofilament Medium integrates into the cytoskeletal arrangement pathways that govern axonal transport and stability. It plays a significant role in the neuronal transport pathway associating with other proteins such as dynein and kinesin responsible for the motor functions along axons. Also it relates to the MAP kinase pathway where phosphorylation events modulate its assembly and disassembly dynamics in response to cellular signals.
Associated diseases and disorders	Neurofilament Medium closely relates to neurodegenerative conditions such as amyotrophic lateral sclerosis (ALS) and Alzheimer's disease. Aberrant phosphorylation or aggregation of NEFM can disrupt neuronal function leading to pathology. In ALS the abnormal accumulation of neurofilaments correlates with motor neuron degeneration. In Alzheimer's its interaction with tau protein poses significant interest as altered states of either could exacerbate neurofibrillary tangles worsening cognitive decline.

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

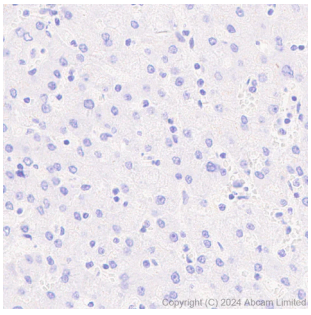
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

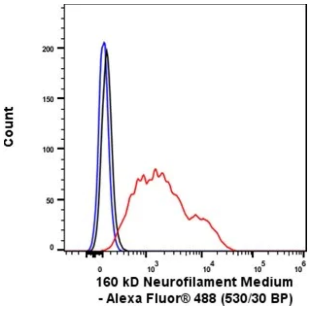
160 kD Neurofilament Medium Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Immunohistochemical analysis of paraffin-embedded Human liver sections labelling 160 kD Neurofilament Medium with ab92539 at 0.105µg/ml, followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) system. Counterstained with Hematoxylin.

Negative control: no staining on human liver. The section was incubated with ab92539 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.

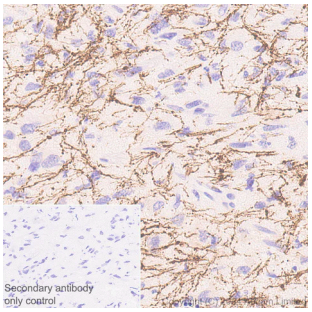


Flow Cytometry (Intracellular) - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Flow Cytometry (Intracellular) staining of SH-SY5Y cells using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed and 90% methanol permeabilized SH-SY5Y (human neuroblastoma epithelial cell) cells labelling Neurofilament with ab92539 at 1/20 dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (Red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

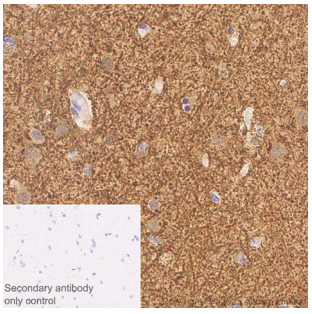
160 kD Neurofilament Medium Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human astrocytoma using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Immunohistochemical analysis of paraffin-embedded Human astrocytoma sections labelling 160 kD Neurofilament Medium with ab92539 at 0.105µg/ml, followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) system. Counterstained with Hematoxylin.

Positive staining on human astrocytoma. The section was incubated with ab92539 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument. 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-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum tissue using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

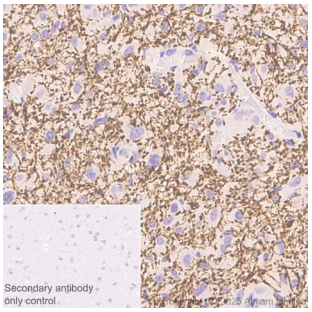
Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling 160 kD Neurofilament Medium with ab92539 at 1/1000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human cerebrum. The primary antibody was incubated 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-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human glioblastoma multiforme tissue using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Immunohistochemical analysis of paraffin-embedded Human glioblastoma multiforme tissue labeling 160 kD Neurofilament Medium with ab92539 at 1/1000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

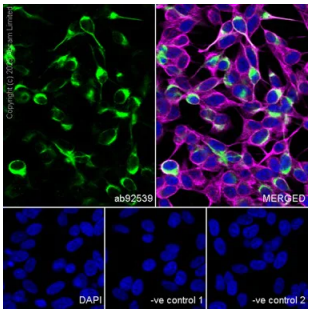
Positive staining on human glioblastoma multiforme. The primary antibody was incubated for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

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

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Immunocytochemistry/ Immunofluorescence - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-160 kD Neurofilament Medium antibody

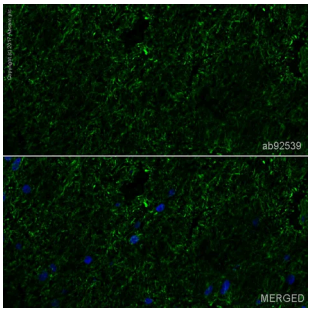
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Immunofluorescent analysis of 100% Methanol-fixed, 0.1% TritonX-100 permeabilized SH-SY5Y cells labelling Neurofilament with ab92539 at 1/200 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green).

ab7291 Anti-alpha Tubulin mouse monoclonal antibody at 1/1000 dilution, was co-incubated with ab92539 overnight at 4° C, followed by ab150120 Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) at 1/1000 dilution at RT for 45 min (Magenta).

Confocal image showing cytoplasmic staining in SH-SY5Y cells (shown in green). Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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



Immunohistochemistry (Frozen sections) - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Immunohistochemistry (Frozen sections) staining of Human Cerebral Cortex using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Immunohistochemistry image of Neurofilament 160 kDa staining in a section of frozen normal human cerebral cortex*.

The section was fixed using 10% formaldehyde in 1XPBS for 10 minutes. No antigen retrieval step was performed prior to staining. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab92539 at 1/500 dilution. The secondary antibody was ab150081 (colored green) used at 1 ug/ml for 1hour at room temperature. DAPI was used to stain the cell nuclei (colored blue) at a concentration of 1.43µM for 1hour at room temperature.The section was then mounted using Fluoromount®.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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

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



Western blot - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Western blot staining of 293T (Human embryonic kidney epithelial cell) whole cell lysate using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
All lanes:
Western blot - Anti-160 kD Neurofilament Medium antibody [EP2460] - Neuronal Marker (ab92539) at 1/10000 dilution

All lanes:
293T (Human embryonic kidney epithelial cell) whole cell lysate at 15 µg

Secondary

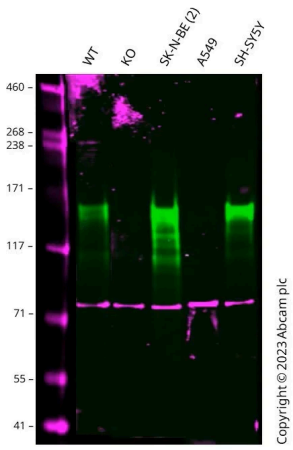
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 160 kDa

Exposure time: 3s



Western blot - Anti-160 kD Neurofilament Medium antibody [EP2460] - BSA and Azide free (ab247580)

160 kD Neurofilament Medium Western blot staining using rabbit Anti-160 kD Neurofilament Medium antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab92539).

Anti-NEFM antibody [EP2460] (ab92539) staining at 0.01µg/ml, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab92539 was shown to bind specifically to NEFM. A band was observed at 140-160 kDa in wild-type HEK-293T cell lysates with no signal observed at this size in NEFM knockout cell line. To generate this image, wild-type and NEFM knockout HEK-293T cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.

All lanes:
Western blot - Anti-160 kD Neurofilament Medium antibody [EP2460] - Neuronal Marker (ab92539) at 0.01 µg/mL

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
NEFM knockout HEK-293T cell lysate at 20 µg

Lane 3:
SK-N-BE cell lysate at 20 µg

Lane 4:
A549 cell lysate at 20 µg

Lane 5:
SH-SY5Y cell lysate at 20 µg

Secondary

Lanes 1 - 5:
Goat anti-Rabbit IgG H&L 800CW at 1/20000 dilution

Lanes 1 - 5:
Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Predicted band size: 102 kDa

Observed band size: 140-160 kDa

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