

Neurofilament L

Cat.No. 171 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 200 IHC-P: 1 : 200 iDISCO: 1 : 100
Immunogen	with AA 200-292 missing. Immunogen corresponds to AA 1 to 284 in AAH66952.1 (UniProt Id: P07196)
Reactivity	Reacts with: human (P07196), rat (P19527), mouse (P08551). Other species not tested yet.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Neurofilaments are exclusively expressed in nerve cells and are the major structural component of large-diameter myelinated axons. They are predominately composed of three proteins, Neurofilament H, L and M and are among the most highly phosphorylated neuronal proteins.

Selected References for 171 002

Conditional deletion of L1CAM in human neurons impairs both axonal and dendritic arborization and action potential generation.

Patzke C, Acuna C, Giam LR, Wernig M, Südhof TC

The Journal of experimental medicine (2016) 2134: 499-515. . **WB, ICC; tested species: mouse**

Regulatory Function of Sympathetic Innervation on the Endo/Lysosomal Trafficking of Acetylcholine Receptor.

Straka T, Schröder C, Roos A, Kollipara L, Sickmann A, Williams MPI, Hafner M, Khan MM, Rudolf R

Frontiers in physiology (2021) 12: 626707. . **IHC, iDISCO; tested species: mouse**

Impaired Neurofilament Integrity and Neuronal Morphology in Different Models of Focal Cerebral Ischemia and Human Stroke Tissue.

Mages B, Aleithe S, Altmann S, Blietz A, Nitzsche B, Barthel H, Horn AKE, Hobusch C, Härtig W, Krueger M, Michalski D, et al.

Frontiers in cellular neuroscience (2018) 12: 161. . **WB, IHC; tested species: human,mouse,rat**

Gene Dosage Dependent Aggravation of the Neurological Phenotype in the 5XFAD Mouse Model of Alzheimer's Disease.

Richard BC, Kurdakova A, Baches S, Bayer TA, Weggen S, Wirths O

Journal of Alzheimer's disease : JAD (2015) 454: 1223-36. . **IHC-P**

Dipeptidyl peptidase 4 deficiency improves survival after focal cerebral ischemia in mice and ameliorates microglia activation and specific inflammatory markers.

Höfling C, Donkersloot P, Ulrich L, Burghardt S, Opitz M, Geissler S, Schilling S, Cynis H, Michalski D, Roßner S

Neurobiology of disease (2024) 201: 106671. . **IHC; tested species: mouse**

Catenin signaling controls phrenic motor neuron development and function during a narrow temporal window.

Vagnozzi AN, Moore MT, de Boer RL, Agarwal A, Zampieri N, Landmesser LT, Philippidou P

bioRxiv : the preprint server for biology (2023) : . . **IHC; tested species: mouse**

Neurofilament Levels in Dendritic Spines Associate with Synaptic Status.

Gürth CM, do Rego Barros Fernandes Lima MA, Macarrón Palacios V, Cereceda Delgado AR, Hubrich J, D'Este E

Cells (2023) 126: . . **ICC; tested species: rat**

Reduced synaptic proteins and SNARE complexes in Down syndrome with Alzheimer's disease and the Dp16 mouse Down syndrome model: Impact of APP gene dose.

Chen XQ, Zuo X, Becker A, Head E, Mobley WC

Alzheimer's & dementia : the journal of the Alzheimer's Association (2022) : . . **WB; tested species: human,mouse**

Update on Perineuronal Net Staining With Wisteria floribunda Agglutinin (WFA).

Härtig W, Meinicke A, Michalski D, Schob S, Jäger C

Frontiers in integrative neuroscience (2022) 16: 851988. . **IHC; tested species: mouse**

Mechanism of disease and therapeutic rescue of Dok7 congenital myasthenia.

Oury J, Zhang W, Leloup N, Koide A, Corrado AD, Ketavarapu G, Hattori T, Koide S, Burden SJ

Nature (2021) : . . **IHC; tested species: mouse**

Microglial dyshomeostasis drives perineuronal net and synaptic loss in a CSF1R^{+/−} mouse model of ALS, which can be rescued via CSF1R inhibitors.

Arreola MA, Soni N, Crapser JD, Hohsfield LA, Elmore MRP, Matheos DP, Wood MA, Swarup V, Mortazavi A, Green KN

Science advances (2021) 735: . . **IHC; tested species: mouse**

Classification of Microglial Morphological Phenotypes Using Machine Learning.

Leyh J, Paeschke S, Mages B, Michalski D, Nowicki M, Bechmann I, Winter K

Frontiers in cellular neuroscience (2021) 15: 701673. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/171002> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.