

Neurofilament M

Cat.No. 171 204; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For reconstitution add 100 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: not recommended IP: not tested yet ICC: 1 : 500 IHC: 1 : 500 IHC-P: 1 : 500
Immunogen	Recombinant protein corresponding to AA 763 to 848 from mouse Neurofilament M (UniProt Id: P08553)
Reactivity	Reacts with: rat (P12839), mouse (P08553). 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 171 204

Peptide backbone modifications of amyloid β (1-40) impact fibrillation behavior and neuronal toxicity. Schwarze B, Korn A, Höfling C, Zeitschel U, Krueger M, Roßner S, Huster D. Scientific reports (2021) 11: 23767. . **ICC; 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. . **IHC; tested species: human,mouse**

Synaptic and functional alterations in the development of mutant huntingtin expressing hiPSC-derived neurons. Dinamarca MC, Colombo L, Tousiaki NE, Müller M, Pecho-Vrieseling E. Frontiers in molecular biosciences (2022) 9: 916019. . **ICC; tested species: human**

Neuroglia infection by rabies virus after anterograde virus spread in peripheral neurons. Potratz M, Zaack LM, Weigel C, Klein A, Freuling CM, Müller T, Finke S. Acta neuropathologica communications (2020) 81: 199. . **IHC; tested species: mouse**

Autophagy is essential for oligodendrocyte differentiation, survival, and proper myelination. Bankston AN, Forston MD, Howard RM, Andres KR, Smith AE, Ohri SS, Bates ML, Bunge MB, Whitemore SR. Glia (2019) : . . **IHC; tested species: mouse**

Selected General References

New movements in neurofilament transport, turnover and disease. Barry DM, Millecamps S, Julien JP, Garcia ML. Experimental cell research (2007) 31310: 2110-20. .

Regulation between O-GlcNAcylation and phosphorylation of neurofilament-M and their dysregulation in Alzheimer disease. Deng Y, Li B, Liu F, Iqbal K, Grundke-Iqbal I, Brandt R, Gong CX. FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2008) 221: 138-45. .

CSF neurofilament proteins in the differential diagnosis of dementia. de Jong D, Jansen RW, Pijnenburg YA, van Geel WJ, Borm GF, Kremer HP, Verbeek MM. Journal of neurology, neurosurgery, and psychiatry (2007) 789: 936-8. .

14-3-3 protein binds to the low molecular weight neurofilament (NFL) mRNA 3' UTR. Ge WW, Volkening K, Leystra-Lantz C, Jaffe H, Strong MJ. Molecular and cellular neurosciences (2007) 341: 80-7. .

Differential subcellular localization of phosphorylated neurofilament and tau proteins in degenerating neurons of the human entorhinal cortex.

Porchet R, Probst A, Dráberová E, Dráber P, Riederer IM, Riederer BM. Neuroreport (2003) 147: 929-33. .

Influence of the axotomy to cell body distance in rat rubrospinal and spinal motoneurons: differential regulation of GAP-43, tubulins, and neurofilament-M.

Fernandes KJ, Fan DP, Tsui BJ, Cassar SL, Tetzlaff W. The Journal of comparative neurology (1999) 4144: 495-510. .

Neurofilament protein is differentially distributed in subpopulations of corticocortical projection neurons in the macaque monkey visual pathways.

Hof PR, Ungerleider LG, Webster MJ, Gattass R, Adams MM, Sailstad CA, Morrison JH. The Journal of comparative neurology (1996) 3761: 112-27. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/171204> 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.