

CNP1

Cat.No. 355 004; 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: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 500 IHC-P: 1 : 500
Immunogen	Recombinant protein corresponding to AA 1 to 420 from mouse CNP1 (UniProt Id: P16330)
Reactivity	Reacts with: rat (P13233), mouse (P16330). Other species not tested yet.
Specificity	K.O. validated

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

Background

The 2', 3'-cyclic nucleotide 3'-phosphodiesterase **CNP 1**, also referred to as CNPase and CNP, is one of the most abundant membrane-associated enzymes in the myelin sheath of the vertebrate nervous system.

It is assumed that CNP 1 participates in RNA metabolism of myelinating oligodendrocytes.

Selected References for 355 004

Chd8 Mutation Leads to Autistic-like Behaviors and Impaired Striatal Circuits.
Platt RJ, Zhou Y, Slaymaker IM, Shetty AS, Weisbach NR, Kim JA, Sharma J, Desai M, Sood S, Kempton HR, Crabtree GR, et al. Cell reports (2017) 192: 335-350. . **IHC; tested species: mouse**

Oligodendrocyte Maturation Alters the Cell Death Mechanisms That Cause Demyelination.
Chapman TW, Kamen Y, Piedra ET, Hill RA
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 4413: . . **IHC; tested species: mouse**

Transient upregulation of procaspase-3 during oligodendrocyte fate decisions.
Kamen Y, Chapman TW, Piedra ET, Ciolkowski ME, Hill RA
bioRxiv : the preprint server for biology (2024) : . . **IHC; tested species: mouse**

INSIHGT: an accessible multi-scale, multi-modal 3D spatial biology platform.
Yau CN, Hung JTS, Campbell RAA, Wong TCY, Huang B, Wong BTY, Chow NKN, Zhang L, Tsoi EPL, Tan Y, Li JJX, et al. Nature communications (2024) 151: 10888. . **IHC; tested species: mouse**

Oligodendrocyte death initiates synchronous remyelination to restore cortical myelin patterns in mice.
Chapman TW, Olveda GE, Bame X, Pereira E, Hill RA
Nature neuroscience (2023) 264: 555-569. . **IHC; tested species: mouse**

Regionally Altered Immunosignals of Surfactant Protein-G, Vascular and Non-Vascular Elements of the Neurovascular Unit after Experimental Focal Cerebral Ischemia in Mice, Rats, and Sheep.
Michalski D, Reimann W, Spielvogel E, Mages B, Biedermann B, Barthel H, Nitzsche B, Schob S, Härtig W
International journal of molecular sciences (2022) 2311: . . **IHC; tested species: mouse**

Increased Immunosignals of Collagen IV and Fibronectin Indicate Ischemic Consequences for the Neurovascular Matrix Adhesion Zone in Various Animal Models and Human Stroke Tissue.
Michalski D, Spielvogel E, Puchta J, Reimann W, Barthel H, Nitzsche B, Mages B, Jäger C, Martens H, Horn AKE, Schob S, et al. Frontiers in physiology (2020) 11: 575598. . **IHC; tested species: mouse**

Simultaneous alterations of oligodendrocyte-specific CNP, astrocyte-specific AQP4 and neuronal NF-L demarcate ischemic tissue after experimental stroke in mice.
Mages B, Aleithe S, Blietz A, Krueger M, Härtig W, Michalski D
Neuroscience letters (2019) : 134405. . **IHC; tested species: mouse**

Selected General References

Myelin 2',3'-cyclic nucleotide 3'-phosphodiesterase: active-site ligand binding and molecular conformation.
Myllykoski M et al. PLoS ONE (2012) PubMed:22393399

Resilient emotionality and molecular compensation in mice lacking the oligodendrocyte-specific gene Cnp1.
Edgar NM et al. Transl Psychiatry (2011) PubMed:22832658

Disruption of Cnp1 uncouples oligodendroglial functions in axonal support and myelination.
Lappe-Siefke C et al. Nat. Genet. (2003) PubMed:12590258

Differential ultrastructural localization of myelin basic protein, myelin/oligodendroglial glycoprotein, and 2',3'-cyclic nucleotide 3'-phosphodiesterase in the CNS of adult rats.
Brunner C et al. J. Neurochem. (1989) PubMed:2462020

Immunocytochemical localization by electron microscopy of 2',3'-cyclic nucleotide 3'-phosphodiesterase in developing oligodendrocytes of normal and mutant brain.
Braun PE et al. J. Neurosci. (1988) PubMed:2842470

Access the online factsheet including applicable protocols
at <https://sysy.com/product/355004> 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 at 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.