SYSY Antibodies

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CNP1 (CNPase)

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_2O, 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 (FFPE)**: 1 : 500
Immunogen	Full length mouse recombinant 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 **CNP1**, 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 CNP1 participates in RNA metabolism of myelinating oligodendrocytes.

Selected References for 355 004

Norepinephrine regulates calcium signals and fate of oligodendrocyte precursor cells in the mouse cerebral cortex.
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Nature communications (2023) 141: 8122. . **ICC; tested species: mouse**

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 mechanotransduction channel TMEM63A regulates myelin sheath geometry.
Dereddi RR, Djannatian M, Fiore F, Kalita D, Verkest C, Torres FB, Möbius W, Khodaie B, Ruhwedel T, Alhalaseh K, Schifferer M, et al.
Neuron (2026) : . . **IHC; tested species: mouse**

Age-impaired remyelination is associated with dysregulated microglial transitions.
Zia S, Traetta ME, Baaklini CS, Hammond BP, John RK, Souter KM, Meijns N, Afun LKA, Panda S, González Ibáñez F, Burr MK, et al.
Nature communications (2025) 161: 9951. . **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.
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Oligodendrocyte death initiates synchronous remyelination to restore cortical myelin patterns in mice.
Chapman TW, Olveda GE, Bame X, Pereira E, Hill RA
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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

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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.