SYSY Antibodies

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Parvalbumin

Cat.No. 195 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 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 : 5000 up to 1 : 10000 (AP staining) (see remarks) **IP**: yes **ICC**: external data (see remarks) **IHC**: 1 : 500 up to 1 : 1000 **IHC-P (FFPE)**: 1 : 500
Immunogen	Full-length recombinant rat Parvalbumin (UniProt Id: P02625)
Reactivity	Reacts with: human (P20472), rat (P02625), mouse (P32848), grashopper. Other species not tested yet.
Matching control	195-0P
Remarks	**WB**: Due to the small size of this protein, we recommend 12% BIS-TRIS gels with a MES based running buffer. **ICC**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols.

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

Background

Parvalbumin is a small, acidic calcium binding protein and belongs to the family of EF hand proteins. The protein is found in skeletal muscle and the brain of vertebrates where it locates to a specific population of GABAergic interneurons. This subset of neurons may contribute to maintaining the balance between excitation and inhibition in the cortex and the hippocampus.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 195 002

MGE-Like Neural Progenitor Cell Survival and Expression of Parvalbumin and Proenkephalin in a Jaundiced Rat Model of Kernicterus.
Yang FC, Vivian JL, Traxler C, Shapiro SM, Stanford JA
Cell transplantation () 31: 9636897221101116. . **ICC, IHC; tested species: human,rat**

Aberrant Development of Hippocampal GABAergic Neurons Arising from Hypothyroidism Contributes to Memory Deficits in Mice Through Maf Suppressing Mef2c.
Wu M, Zeng X, Cai Y, Chen H, Yang H
Biomedicines (2025) 136: . . **WB, IHC; tested species: mouse**

Optogenetic Inhibition of Striatal Parvalbuminergic Interneurons Unmasks Impaired GABA and Adenosine Signaling in DYT1 Knock-In Mice.
Marx J, Becker S, Höfert L, Hochheim I, Helmschrodt C, Dreßler J, Richter A, Schulz A
International journal of molecular sciences (2026) 2710: . . **IHC; tested species: mouse**

In utero exposure to anti-Caspr2 antibody disrupts parvalbumin interneuron function in the hippocampus.
Bagnall-Moreau C, Strohl JJ, Spielman B, Cruz C, Huerta P, Brimberg L
Brain, behavior, and immunity (2026) 132: 106192. . **IHC; tested species: mouse**

Impaired dynein function preserves spinal interneuron survival and positioning in an ALS-like mouse model.
Christoforidou E, Rowe JS, Simoes FA, Cassel R, Dupuis L, Leigh PN, Hafezparast M
PloS one (2026) 214: e0346246. . **IHC; tested species: mouse**

Expression of the extracellular matrix component brevican prior and after deep brain stimulation in the dtsz hamster model of dystonia.
Lüttig A, Perl S, Franz D, Kotyra M, Morawski M, Köhling R, Richter A
Brain research bulletin (2025) 230: 111486. . **IHC**

Parvalbumin-positive primary afferent projections to motoneurons increase after complete spinal transection in neonatal and juvenile rats.
Takiguchi M, Matsuyama R, Shinoda S, Funakoshi K
IBRO neuroscience reports (2025) 18: 539-544. . **IHC; tested species: rat**

Increased seizure susceptibility in thyroid hormone transporter Mct8/Oatp1c1 knockout mice is associated with altered neurotransmitter systems development.
Alcaide Martin A, Bauer R, Führer-Sakel D, Heuer H, Mayerl S
Progress in neurobiology (2025) 247: 102731. . **IHC; tested species: mouse**

Piccolino is required for ribbon architecture at cochlear inner hair cell synapses and for hearing.
Michanski S, Kapoor R, Steyer AM, Möbius W, Früholz I, Ackermann F, Gültas M, Garner CC, Hamra FK, Neef J, Strenzke N, et al.
EMBO reports (2023) 249: e56702. . **IHC; tested species: rat**

Loss of the parkinsonism-associated protein FBXO7 in glutamatergic forebrain neurons in mice leads to abnormal motor behavior and synaptic defects.
Wang J, Joseph S, Vingill S, Dere E, Tatenhorst L, Ronnenberg A, Lingor P, Preisinger C, Ehrenreich H, Schulz JB, Stegmüller J, et al.
Journal of neurochemistry (2023) : . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/195002 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.