SYSY Antibodies

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Parvalbumin

Cat.No. 195 004; 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) (see remarks) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 up to 1 : 10000 **IHC-P (FFPE)**: 1 : 500 up to 1 : 2000 **EM**: external data (see remarks)
Immunogen	Full-length recombinant rat Parvalbumin (UniProt Id: P02625)
Reactivity	Reacts with: rat (P02625), mouse (P32848), chicken, zebrafish, sheep, human (P20472). 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. The rabbit polyclonal antiserum (cat. no. 195 002) is more sensitive and recommended for westernblotting. **EM**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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 195 004

Expression, Subcellular Localization, and Mechanistic Analysis of Intellectual Disability Syndrome Protein ABBA.
Jabeen A, Khanal P, Toissalo E, Lahti L, Minkeviciene R, Kramm A, Rivera C, Hotulainen P
Molecular neurobiology (2025) 631: 271. . **ICC, IHC, IHC-P; tested species: mouse,rat**

A Hippocampus-Accumbens Tripartite Neuronal Motif Guides Appetitive Memory in Space.
Trouche S, Koren V, Doig NM, Ellender TJ, El-Gaby M, Lopes-Dos-Santos V, Reeve HM, Perestenko PV, Garas FN, Magill PJ, Sharott A, et al.
Cell (2019) : . . **IHC, EM; tested species: mouse**

Long term effects of peripubertal stress on excitatory and inhibitory circuits in the prefrontal cortex of male and female mice.
Bueno-Fernandez C, Perez-Rando M, Alcaide J, Coviello S, Sandi C, Castillo-Gómez E, Nacher J
Neurobiology of stress (2021) 14: 100322. . **ICC, IHC; tested species: mouse**

Synaptic organisation and behaviour-dependent activity of mGluR8a-innervated GABAergic trilaminar cells projecting from the hippocampus to the subiculum.
Katona L, Hartwich K, Tomioka R, Somogyi J, Roberts JDB, Wagner K, Joshi A, Klausberger T, Rockland KS, Somogyi P
Brain structure & function (2020) 2252: 705-734. . **IHC, EM; tested species: rat**

Isotropic, aberration-corrected light sheet microscopy for rapid high-resolution imaging of cleared tissue.
Aakhte M, Müller GF, Roos L, Li J, Göpel T, Weiss KR, Diniz AM, Wenzel J, Schwaninger M, Moser T, Huisken J, et al.
Nature biotechnology (2025) : . . **IDISCO; tested species: mouse**

Orbitofrontal PV interneurons modulate social interaction via default mode network dynamics.
Khatamsaz E, Ionescu TM, Keppler K, Stoller F, Kätzel D, Marston HM, Hengerer B
Communications biology (2026) 91: . . **IHC; tested species: mouse**

Sex-dependent interferon signaling contributes to female-biased vulnerability in Alzheimer's disease.
López-López V, Iniesta G, Galán-Ganga M, Expósito-Coca A, Durán-Laforet V, Bhojwani-Cabrera AM, Navarrón CM, Guillot-Fernández M, Venero JL, Sánchez-Mut JV, Barco A, et al.
Journal of neuroinflammation (2026) 231: . . **IHC; tested species: mouse**

Estrogen receptor β in the prefrontal cortex mediates stress-induced anxiety-like behaviors in female mice.
Woodward E, Coutellier L
Psychoneuroendocrinology (2026) 194: 108028. . **IHC; tested species: mouse**

Comparing and Optimizing Tissue Clearing Protocols for Cochlear Immunostaining and 3D Reconstruction by Light-Sheet Microscopy.
Becker FMK, Dunkel G, Giampetraglia M, Weigelin B, Reisinger E
Journal of the Association for Research in Otolaryngology : JARO (2026) : . . **IDISCO; tested species: mouse**

Astroglial disinhibition of cortical circuits disrupts cognition via kynurenic acid in mice.
Beilmann V, Furrer J, Schalbetter SM, Schaer R, Tiziani E, Ferrari KD, Herrero F, Heeb C, von Faber-Castell A, Condrau J, Weber-Stadlbauer U, et al.
Nature communications (2026) 171: . . **IHC; tested species: mouse**

Oxytocin attenuates fear learning via enhancing somatostatin interneuron-mediated local GABAergic inhibition in the prelimbic cortex.
Xu H, Li Y, Cui X, Zhang Y, Wu X, Zhuo SS, He M, Xiao L
Science advances (2026) 1224: eaef8400. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/195004 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.