SYSY Antibodies

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Parvalbumin

Cat.No. 195 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°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**: yes (see remarks) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 up to 1 : 1000 **IHC-P**: 1 : 500
Clone	58E1
Subtype	IgG1 (κ light chain)
Immunogen	Full-length recombinant rat Parvalbumin (UniProt Id: P02625)
Reactivity	Reacts with: rat (P02625), mouse (P32848). No signal: zebrafish. Other species not tested yet.
Matching control	195-0P
Remarks	**WB**: The rabbit polyclonal antiserum (cat. no. 195 002) is recommended for westernblotting. Due to its small size, a tricine gel should be used.

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.

Selected References for 195 011

Isolated P/Q Calcium Channel Deletion in Layer VI Corticothalamic Neurons Generates Absence Epilepsy.
Bomben VC, Aiba I, Qian J, Mark MD, Herlitze S, Noebels JL
The Journal of neuroscience : the official journal of the Society for Neuroscience (2016) 362: 405-18. . **IHC; tested species: mouse**

Adolescent intermittent ethanol exposure decreases perineuronal nets in the hippocampus in a sex dependent manner: Modulation through pharmacological inhibition of RPTPβ/ζ.
Galán-Llario M, Gramage E, García-Guerra A, Torregrosa AB, Gasparyan A, Navarro D, Navarrete F, García-Gutiérrez MS, Manzanares J, Herradón G
Neuropharmacology (2024) 247: 109850. . **IHC; tested species: mouse**

Investigations on the Ability of the Insular Cortex to Process Peripheral Immunosuppression.
Bihorac J, Salem Y, Lückemann L, Schedlowski M, Doenlen R, Engler H, Mark MD, Dombrowski K, Spoida K, Hadamitzky M
Journal of neuroimmune pharmacology : the official journal of the Society on NeuroImmune Pharmacology (2024) 191: 40. . **IHC; tested species: rat**

Sexually dimorphic role for insular perineuronal nets in aversion-resistant alcohol consumption.
Martins de Carvalho L, Chen H, Sutter M, Lasek AW
Frontiers in psychiatry (2023) 14: 1122423. . **IHC; tested species: mouse**

An enriched environment ameliorates the reduction of parvalbumin-positive interneurons in the medial prefrontal cortex caused by maternal separation early in life.
Irie K, Ohta KI, Ujihara H, Araki C, Honda K, Suzuki S, Warita K, Otabi H, Kumei H, Nakamura S, Koyano K, et al.
Frontiers in neuroscience (2023) 17: 1308368. . **IHC; tested species: mouse**

The role of α-tubulin tyrosination in controlling the structure and function of hippocampal neurons.
Hosseini S, van Ham M, Erck C, Korte M, Michaelsen-Preusse K
Frontiers in molecular neuroscience (2022) 15: 931859. . **IHC; tested species: mouse**

Activity-dependent reconnection of adult-born dentate granule cells in a mouse model of frontotemporal dementia.
Terreros-Roncal J, Flor-García M, Moreno-Jiménez EP, Pallas-Bazarra N, Rábano A, Sah N, van Praag H, Giacomini D, Schinder AF, Ávila J, Llorens-Martín M, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2019) : . . **IHC; tested species: mouse**

The transgenic mouse line Igsf9-eGFP allows targeted stimulation of inferior olive efferents.
Pätz C, Brachtendorf S, Eilers J
Journal of neuroscience methods (2018) 296: 84-92. . **IHC; tested species: mouse**

Mechanisms of Functional Hypoconnectivity in the Medial Prefrontal Cortex of Mecp2 Null Mice.
Sceniak MP, Lang M, Enomoto AC, James Howell C, Hermes DJ, Katz DM
Cerebral cortex (New York, N.Y. : 1991) (2016) 265: 1938-1956. . **IHC; tested species: mouse**

Selected General References

Quantitative analysis of parvalbumin-immunoreactive cells in the human epileptic hippocampus.
Andrioli A et al. Neuroscience (2007) PubMed:17850980

Expression patterns of calretinin, calbindin and parvalbumin and their colocalization in neurons during development of Macaca monkey retina.
Hendrickson A et al. Exp. Eye Res. (2007) PubMed:17845803

Access the online factsheet including applicable protocols at https://sysy.com/product/195011 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.