SYSY Antibodies

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Glutamine synthetase

Cat.No. 367 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 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**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500
Immunogen	Full-length recombinant mouse Glutamine synthetase (UniProt Id: P15105)
Reactivity	Reacts with: rat (P09606), mouse (P15105). Other species not tested yet.

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

Background

Glutamine synthetase, also referred to as **Glutamate-ammonia ligase** or **GS**, is an enzyme that catalyzes the ATP-dependent condensation of glutamate with ammonia to yield glutamine. It is present predominantly in brain, kidneys, and liver. In the brain, it is particularly found in astrocytes. Glutamine synthetase plays a pivotal role in glutamate and glutamine homoeostasis, and it is largely responsible for the removal of both blood-derived and metabolically generated ammonia, preventing neurotoxicity. It is also a key enzyme in the recycling of the neurotransmitter glutamate.
Several studies indicated that the expression, distribution, and activity of brain glutamine synthetase is altered in some brain disorders, including Alzheimer's disease, schizophrenia, depression, suicidality, and mesial temporal lobe epilepsy (MTLE).

Selected References for 367 005

Innate Immune Zonation in the Liver: NF-κB (p50) Activation and C-Reactive Protein Expression in Response to Endotoxemia Are Zone Specific.
McCarthy WC, Sherlock LG, Grayck MR, Zheng L, Lacayo OA, Solar M, Orlicky DJ, Dobrinskikh E, Wright CJ
Journal of immunology (Baltimore, Md. : 1950) (2023) 2109: 1372-1385. . **IHC-P; tested species: mouse**

Caloric restriction triggers morphofunctional remodeling of astrocytes and enhances synaptic plasticity in the mouse hippocampus.
Popov A, Denisov P, Bychkov M, Brazhe A, Lyukmanova E, Shenkarev Z, Lazareva N, Verkhratsky A, Semyanov A
Cell death & disease (2020) 113: 208. . **WB; tested species: mouse**

Lysophosphatidic acid activates satellite glia cells and Schwann cells.
Robering JW, Gebhardt L, Wolf K, Kühn H, Kremer AE, Fischer MJM
Glia (2019) : . . **IHC; tested species: mouse**

Munc18-1 is crucial for photoreceptor function, survival and regulation of syntaxin-3 localization and expression.
Huang M, Chow CH, Noworolski R, Charish J, Indrawinata K, Harada H, Wallace VA, Monnier PP, Sugita S
Scientific reports (2026) 16: . . **IHC; tested species: mouse**

Steatohepatitis-induced vascular niche alterations promote melanoma metastasis.
Hoffmann J, Schüler J, Dietsch B, Kürschner-Zacharias SW, Sticht C, Trogisch FA, Schreitmüller M, Baljkas T, Schledzewski K, Reinhart M, Wohlfeil SA, et al.
Cancer & metabolism (2025) 131: 5. . **IHC-P; tested species: mouse**

The Musashi-1-type 2 deiodinase pathway regulates astrocyte proliferation.
Mohácsik P, Halmos E, Dorogházi B, Ruska Y, Wittmann G, Bianco AC, Fekete C, Gereben B
The Journal of biological chemistry (2024) 3007: 107477. . **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**

The normalizing effects of the CYP46A1 activator efavirenz on retinal sterol levels and risk factors for glaucoma in Apoj-/- mice.
El-Darzi N, Mast N, Li Y, Dailey B, Kang M, Rhee DJ, Pikuleva IA
Cellular and molecular life sciences : CMLS (2023) 807: 194. . **IHC; tested species: mouse**

Microglia alter the threshold of spreading depolarization and related potassium uptake in the mouse brain.
Varga DP, Menyhárt Á, Pósfai B, Császár E, Lénárt N, Cserép C, Orsolits B, Martinecz B, Szlepák T, Bari F, Farkas E, et al.
Journal of cerebral blood flow and metabolism : official journal of the International Society of Cerebral Blood Flow and Metabolism (2020) : 271678X19900097. . **IHC; tested species: mouse**

Changes in the transcriptional fingerprint of satellite glial cells following peripheral nerve injury.
Jager SE, Pallesen LT, Richner M, Harley P, Hore Z, McMahon S, Denk F, Vaegter CB
Glia (2020) : . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/367005 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.