SYSY Antibodies

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GFAP

Cat.No. 173 004; 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 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 1000 **IHC-P (FFPE)**: 1 : 1000
Immunogen	full-length recombinant human GFAP (UniProt Id: P14136)
Reactivity	Reacts with: human (P14136), rat (P47819), mouse (P03995), chicken, sheep. Other species not tested yet.
Specificity	Specific for GFAP, detects all isoforms. K.O. validated
Matching control	173-0P

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

Background

Glial **f**ibrillary **a**cidic **p**rotein **GFAP** is a glial-specific member of the intermediate filament protein family. This group comprises cell type-specific filamentous proteins with similar structure and function as scaffold for cytoskeleton assembly and maintenance.
Frequently, neural stem cells also express GFAP. In addition many types of brain tumors, probably derived from astrocytic cells, heavily express GFAP. This protein is also found in the lens epithelium, Kupffer cells of the liver, in some cells in salivary tumors and others.
Point-mutations in the GFAP gene have been correlated to Alexander disease, a fatal leukoencephalopathy that leads to the dysmyelination or demyelination of the central nervous system.

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

Selected References for 173 004

Fc gamma receptors are expressed in the developing rat brain and activate downstream signaling molecules upon cross-linking with immune complex.
Stamou M, Grodzki AC, van Oostrum M, Wollscheid B, Lein PJ
Journal of neuroinflammation (2018) 151: 7. . **ICC, FACS; tested species: rat**

Tanycytes and a differential fatty acid metabolism in the hypothalamus.
Hofmann K, Lamberz C, Piotrowitz K, Offermann N, But D, Scheller A, Al-Amoudi A, Kuerschner L
Glia (2017) 652: 231-249. . **IHC, WB; tested species: mouse**

Shank3 related oligodendrocyte alterations in autism are restored by Erk pathway inhibition.
Ma Y, Bauer HF, Bockmann J, Schön M, Boeckers TM, Lutz AK
Molecular psychiatry (2025) : . . **ICC, IHC; tested species: mouse**

Resident Astrocytes can Limit Injury to Developing Hippocampal Neurons upon THC Exposure.
Krassnitzer M, Boisvert B, Beiersdorf J, Harkany T, Keimpema E
Neurochemical research (2022) : . . **WB, IHC; tested species: mouse**

Reactive Glia-Derived Neuroinflammation: a Novel Hallmark in Lafora Progressive Myoclonus Epilepsy That Progresses with Age.
Lahuerta M, Gonzalez D, Aguado C, Fathinajafabadi A, García-Giménez JL, Moreno-Estellés M, Romá-Mateo C, Knecht E, Pallardó FV, Sanz P
Molecular neurobiology (2019) : . . **IHC-P; tested species: mouse**

The Neurolipid Atlas: a lipidomics resource for neurodegenerative diseases.
Feringa FM, Koppes-den Hertog SJ, Wang LY, Derks RJE, Kruijff I, Erlebach L, Heijneman J, Miramontes R, Pömpner N, Blomberg N, Olivier-Jimenez D, et al.
Nature metabolism (2025) : . . **ICC; tested species: human**

Synaptic vesicle endocytosis deficits underlie cognitive dysfunction in mouse models of GBA-linked Parkinson's disease and dementia with Lewy bodies.
Vidyadhara DJ, Bäckström D, Chakraborty R, Ruan J, Park JM, Mistry PK, Chandra SS
Nature communications (2025) 161: 8484. . **IHC; tested species: mouse**

Brain-wide microstrokes affect the stability of memory circuits in the hippocampus.
Heiser H, Kiessler F, Roggenbach A, Ibanez V, Wieckhorst M, Helmchen F, Gjorgjieva J, Wahl AS
Nature communications (2025) 161: 3462. . **IHC; tested species: mouse**

Radiation Retinopathy: Microangiopathy-Inflammation-Neurodegeneration.
Davids AM, Pompös IM, Kociok N, Heufelder J, Skosyrski S, Reichhart N, Joussen AM, Wolf SA
Cells (2025) 144: . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/173004 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.