SYSY Antibodies

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GFAP

Cat.No. 173 002; 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 : 1000 (AP staining) (see remarks) **IP**: yes **ICC**: 1 : 1000 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 1000 up to 1 : 5000 **ELISA**:
Immunogen	full-length recombinant human GFAP (UniProt Id: P14136)
Reactivity	Reacts with: human (P14136), rat (P47819), mouse (P03995), chicken, zebrafish. Other species not tested yet.
Specificity	Specific for GFAP, detects all isoforms.
Matching control	173-0P
Remarks	**WB**: The polyclonal antibodies are more sensitive compared to the monoclonals.

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 173 002

Distinct in vivo roles of secreted APP ectodomain variants APPsα and APPsβ in regulation of spine density, synaptic plasticity, and cognition.
Richter MC, Ludewig S, Winschel A, Abel T, Bold C, Salzburger LR, Klein S, Han K, Weyer SW, Fritz AK, Laube B, et al.
The EMBO journal (2018) : . . **WB, IHC; tested species: mouse**

A cost-effective and efficient ex vivo, ex situ human whole brain perfusion protocol for immunohistochemistry.
Hade AC, Philips MA, Promet L, Jagomäe T, Hanumantharaju A, Salumäe L, Reimann E, Plaas M, Vasar E, Väli M
Journal of neuroscience methods (2024) 404: 110059. . **IHC, IHC-P; tested species: human**

Drebrin controls scar formation and astrocyte reactivity upon traumatic brain injury by regulating membrane trafficking.
Schiweck J, Murk K, Ledderose J, Münster-Wandowski A, Ornaghi M, Vida I, Eickholt BJ
Nature communications (2021) 121: 1490. . **ICC, IHC; tested species: mouse**

The Anti-amyloid Compound DO1 Decreases Plaque Pathology and Neuroinflammation-Related Expression Changes in 5xFAD Transgenic Mice.
Boeddrich A, Babila JT, Wiglenda T, Diez L, Jacob M, Nietfeld W, Huska MR, Haenig C, Groenke N, Buntru A, Blanc E, et al.
Cell chemical biology (2018) : . . **ELISA; tested species: mouse**

ADAM10-Mediated Proteolytic Remodelling of Signalling and Adhesion Proteins on Brain Cell-Derived Small Extracellular Vesicles.
Reimann CC, Altmeppen HC, Koudelka T, Schweizer M, Tholey A, Mohammadi B, Bär J, Cheng L, Glatzel M, Mikhaylova M, Hill AF, et al.
Journal of extracellular biology (2026) 5: e70129. . **ICC; tested species: rat**

Duloxetine ameliorates cerebral ischemic injury by inhibiting autophagy.
Viotti A, Molinaro C, Perego J, Fossaghi A, Parravicini C, Laurenzano E, Borreca A, Piccoli M, Anastasia L, Manenti S, Finardi A, et al.
Autophagy (2026) : . . **IHC; tested species: mouse**

Retinal ganglion cell survival and functional maturation in transiently vascularized human retinal organoids.
Sharma K, Habibey R, Ribeiro MM, Cui B, Siwicki RA, Striebel J, Pawlick JS, Zorn J, Utz L, Renner M, Picelli S, et al.
Cell stem cell (2026) : . . **ICC; tested species: human**

Silicon Dioxide Nanoparticles Alter Social Behavior, Color Preference, Oxidative Stress Markers, and Histological Structure of Brain Regions in Zebrafish (Danio rerio).
Rarinca V, Gurzu IL, Nicoara MN, Ciobica A, Todirascu-Ciornea E, Gurzu B, Solcan C, Ureche D
Life (Basel, Switzerland) (2025) 1511: . . **IHC-P; tested species: zebrafish**

Access the online factsheet including applicable protocols at https://sysy.com/product/173002 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.