SYSY Antibodies

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ATP13A5

Cat.No. 523 003; Polyclonal rabbit 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 : 2000 (see remarks) **IHC-P (FFPE)**: not tested yet **IHC-Fr**: 1 : 500 (see remarks) **IHC-G**: 1 : 500 (see remarks)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of rat ATP13A5 (UniProt Id: F1MA70)
Reactivity	Reacts with: human (Q4VNC0), rat (F1MA70), mouse (Q3TYU2). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with Tris-EDTA buffer pH 9 is required. This antibody requires mild fixation with 4% PFA for 6h. **IHC-Fr**: The following fixatives are possible: 4% formaldehyde/PFA, acetone. **IHC-G**: The following fixatives are possible: 3% glyoxal, 9% glyoxal.

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

Background

ATP13A5 is a marker that plays a key role in identifying central nervous system (CNS) pericytes, which are essential for vascular development and the maintenance of the blood-brain barrier (BBB). CNS pericytes are distinct from those in peripheral organs, and ATP13A5 has emerged as a specific genetic marker for these cells, validated through advanced transcriptomic and genetic models.
In mice, ATP13A5 expression is observed from embryonic day 15, aligning with the establishment of the BBB, and persists into adulthood, underscoring its role in CNS vasculature development. A knock-in model with ATP13A5-driven tdTomato reporter and Cre recombinase demonstrates that ATP13A5 expression is confined to CNS pericytes, including those in the brain, spinal cord, and retina, while showing minimal expression in peripheral tissues.
This marker enables precise genetic manipulation and detailed study of pericyte biology, including their development, heterogeneity, and function within the BBB. The specificity of ATP13A5 facilitates research into its role in neurological disorders, particularly those involving BBB dysfunction, such as Alzheimer's disease. The ATP13A5 model also supports the development of targeted therapies and genetic tools for studying CNS vascular health and disease (1).

Selected General References

Atp13a5 Marker Reveals Pericyte Specification in the Mouse Central Nervous System.
Guo X et al. J Neurosci (2024) PubMed:39261008

Access the online factsheet including applicable protocols at https://sysy.com/product/523003 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.