

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 ₂ O 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: 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: This antibody requires mild fixation. IHC-Fr: Formaldehyde or Acetone fixation are recommended. IHC-G: Fixation with 3% glyoxal, 1% acetic acid, 20% ethanol in ddH ₂ O according to Richter et al. 2017 , or 9% glyoxal, 8% acetic acid in ddH ₂ O according to Konno et al. 2023 are recommended.

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 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.