SYSY Antibodies

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S1PR1

Cat.No. 533 005; 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 up to 1 : 2000 (AP-staining) **ICC**: 1 : 500 up to 1 : 1000 **IHC**: not tested yet **IHC-P**: 1 : 200 up to 1 : 500 (see remarks) **IHC-Fr**: 1 : 500
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of human S1PR1 (UniProt Id: P21453)
Reactivity	Reacts with: human (P21453), mouse (O08530), rat (P48303). Other species not tested yet. (see Remarks)
Remarks	Reactivity for human S1PR1 has only be confirmed in IHC-P applications. **IHC-P**: Not recommended for mouse or rat tissue. No specific signal has been observed using our standard IHC-P protocol. **IHC-Fr**: The following fixatives are possible: methanol-acetone, 4% formaldehyde/PFA, methanol

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

Background

S1PR1, also known as S1P1 and Edg-1, is a widely expressed G-protein–coupled receptor for sphingosine-1-phosphate (S1P), a bioactive lipid found in the bloodstream. Activation of S1PR1 inhibits angiogenic sprouting and enhances cell-to-cell adhesion by regulating VE-cadherin at endothelial junctions during embryogenesis. Consequently, S1PR1 signalling plays a crucial role in vascular development and stability (1).
In adult vertebrates, S1PR1 regulates diverse physiological processes, including vascular and lymphatic permeability, astrocyte proliferation, neuronal protection, lymphocyte egress, marginal B-cell migration in secondary lymphoid organs, heart rate regulation, endothelial integrity, and responses to ischemia-reperfusion injury in multiple tissues (2,3).
S1PR1 is expressed in astrocytes and endothelial cells in the brain, where it is linked to reactive astrocytes and neuroinflammation. Recent findings show that neuronal contact induces S1PR1 expression in perisynaptic astrocyte processes, promoting astrocyte morphology, morphogenesis, and the release of synaptogenic factors crucial for neural circuit formation (4,5).

Selected General References

Dialogue between VE-Cadherin and Sphingosine 1 Phosphate Receptor1 (S1PR1) for Protecting Endothelial Functions.
Garnier O et al. Int J Mol Sci (2023) PubMed:36835432

Astrocyte growth is driven by the Tre1/S1pr1 phospholipid-binding G protein-coupled receptor.
Chen J et al. Neuron (2024) PubMed:38096817

Sphingosine-1-phosphate and its receptors in vascular endothelial and lymphatic barrier function.
Weigel C et al. J Biol Chem (2023) PubMed:37142226

Neuronal contact upregulates astrocytic sphingosine-1-phosphate receptor 1 to coordinate astrocyte-neuron cross communication.
Singh SK et al. Glia (2022) PubMed:34958493

Targeting Sphingosine-1-Phosphate Signaling in Immune-Mediated Diseases: Beyond Multiple Sclerosis.
Pérez-Jeldres T et al. Drugs (2021) PubMed:33983615

Access the online factsheet including applicable protocols at https://sysy.com/product/533005 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.