

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 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 up to 1 : 2000 (AP staining) ICC: 1 : 500 up to 1 : 1000 IHC: not tested yet IHC-P (FFPE): 1 : 200 up to 1 : 500 (see remarks) IHC-Fr: 1 : 500 (see remarks)
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 (FFPE): 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

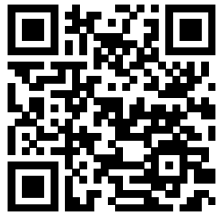
Astrocyte growth is driven by the Tre1/S1pr1 phospholipid-binding G protein-coupled receptor. Chen J et al. Neuron (2024) PubMed:38096817

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 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.