SYSY Antibodies

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TARP-γ3

Cat.No. 254 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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**: 1 : 100 (see remarks) **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 294 to 307 from mouse TARP-γ3 (UniProt Id: Q9JJV5)
Reactivity	Reacts with: rat (Q8VHX0), mouse (Q9JJV5). Other species not tested yet.
Remarks	**ICC**: This antibody produces some unspecific somatic background staining on cell bodies in addition to specific labeling of post-synaptic terminals.

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

Background

Ligand gated cation channels of the AMPA subtype are composed of different GluA subunits and interact with a family of proteins termed transmembrane AMPA-receptor regulatory proteins (TARPs) also known as voltage gated calcium channel gamma subunits or CNAGs (1). These proteins regulate the surface expression and biophysical properties like the gating time of AMPA glutamate receptors (1). Six transmembrane AMPA receptor regulatory protein (TARP) isoforms, classified as Type I (γ-2, -3, -4, and -8) and Type II (γ-5 and -7), are discretely expressed in specific neuronal and glial populations and differentially regulate synaptic transmission throughout the brain (2). One key feature of TARP-gamma2 and TARP-gamma8 is the differential regulation of synaptic strength in the hippocampus that is determined by the number and density of AMPA glutamate receptors (3).
Especially, TARP-gamma8 shows high expression levels in the hippocampus and is only sparsely expressed in other brain areas (4).
The TARP-gamma3 gene locus shows a linkage to childhood absence epilepsy (CAE) (5).

Selected General References

Functional comparison of the effects of TARPs and cornichons on AMPA receptor trafficking and gating.
Shi Y et al. Proc. Natl. Acad. Sci. U.S.A. (2010) PubMed:20805473

TARP γ-2 and γ-8 Differentially Control AMPAR Density Across Schaffer Collateral/Commissural Synapses in the Hippocampal CA1 Area.
Yamasaki M et al. J Neurosci (2016) PubMed:27076426

Hippocampal AMPA receptor gating controlled by both TARP and cornichon proteins.
Kato AS et al. Neuron (2010) PubMed:21172611

Linkage and association analysis of CACNG3 in childhood absence epilepsy.
Everett KV et al. Eur J Hum Genet (2007) PubMed:17264864

Abundant distribution of TARP gamma-8 in synaptic and extrasynaptic surface of hippocampal neurons and its major role in AMPA receptor expression on spines and dendrites.
Fukaya M et al. Eur J Neurosci (2006) PubMed:17074043

Access the online factsheet including applicable protocols at https://sysy.com/product/254003 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.