SYSY Antibodies

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GαO1/2

Cat.No. 271 111; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For **reconstitution** add 100 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**: yes **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 500 up to 1 : 2000 **IHC-P (FFPE)**: 1 : 1000
Clone	101.1
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 355 from rat GαO2 (UniProt Id: P18872)
Reactivity	Reacts with: rat (P59215), mouse (P18872), zebrafish. Other species not tested yet.
Specificity	Recognizes GαO 1 and GαO 2. K.O. validated PubMed: 15872115

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

Background

Neurotransmitters like monoamines, acetylcholine, glutamate, GABA, and glycine, are loaded into synaptic vesicles by transmitter specific vesicular transporters.
It has been shown that the monoamine transporters VmaT 1 and VmaT 2 are under negative regulation by different α subunits of trimeric G-proteins.
In contrast, the vesicular glutamate transporters (VGLUTs) are exclusively regulated by **GαO 2** which modulates the chloride dependence of these proteins.

Selected References for 271 111

Gαo1 and Gαo1/Gαo2 deletion differentially affect hippocampal mossy fiber tract anatomy and neuronal morphogenesis.
Höltje M, Wolkowicz A, Brunk I, Baron J, Ahnert-Hilger G
Journal of neurochemistry (2024) : . . **WB, ICC, IHC; KO verified; tested species: mouse**

Balance of Go1α and Go2α expression regulates motor function via the striatal dopaminergic system.
Baron J, Bilbao A, Hörtnagl H, Birnbaumer L, Leixner S, Spanagel R, Ahnert-Hilger G, Brunk I
Journal of neurochemistry (2018) : . . **WB; tested species: mouse**

The α-subunit of the trimeric GTPase Go2 regulates axonal growth.
Baron J, Blex C, Rohrbeck A, Rachakonda SK, Birnbaumer L, Ahnert-Hilger G, Brunk I
Journal of neurochemistry (2013) 1246: 782-94. . **ICC**

Galphao2 regulates vesicular glutamate transporter activity by changing its chloride dependence.
Winter S, Brunk I, Walther DJ, Höltje M, Jiang M, Peter JU, Takamori S, Jahn R, Birnbaumer L, Ahnert-Hilger G
The Journal of neuroscience : the official journal of the Society for Neuroscience (2005) 2518: 4672-80. . **WB; KO verified**

Selected General References

Go2 G protein mediates galanin inhibitory effects on insulin release from pancreatic β cells.
Tang G et al. Proc. Natl. Acad. Sci. U.S.A. (2012) PubMed:22308501

The neuronal monoamine transporter VMAT2 is regulated by the trimeric GTPase Go(2).
Höltje M et al. J. Neurosci. (2000) PubMed:10704487

The heterotrimeric G protein Go2 regulates catecholamine uptake by secretory vesicles.
Ahnert-Hilger G et al. EMBO J. (1998) PubMed:9430632

Access the online factsheet including applicable protocols at https://sysy.com/product/271111 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.