

## GaO2

Cat.No. 271 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For <b>reconstitution</b> add 100 µl H <sub>2</sub> 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	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> yes <b>ICC:</b> not recommended <b>IHC:</b> not recommended <b>IHC-P:</b> not tested yet
Clone	101.4
Subtype	IgG2b (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 355 from rat GaO2 (UniProt Id: P18872)
Reactivity	Reacts with: rat (P59215), mouse (P18872). Other species not tested yet.
Specificity	K.O. validated PubMed: <a href="#">15872115</a>

**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 271 011

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. . **WB, IP**

Sex and brain region-specific regulation of serotonin transporter activity in synaptosomes in guanine nucleotide-binding protein G(q) α knock-out mice.  
Haase J, Jones AKC, Mc Veigh CJ, Brown E, Clarke G, Ahnert-Hilger G  
Journal of neurochemistry (2021) : . . **WB; 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**

Coordinated control of sensitivity by two splice variants of Gα(o) in retinal ON bipolar cells.  
Okawa H, Pahlberg J, Rieke F, Birnbaumer L, Sampath AP  
The Journal of general physiology (2010) 1364: 443-54. . **WB**

Galphao2 regulates vesicular glutamate transporter activity by changing its chloride dependence.  
Winter S, Brunk I, Walther DJ, Hölte 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).  
Hölte 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/271011> 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 at 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.