**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 H₂O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. For detailed information, see back of the data sheet.

**Applications**
- WB: 1 : 1000 (AP staining) (see remarks)
- ICC: 1 : 500 (see remarks)
- IHC: 1 : 1000 (see remarks)
- IHC-P/FPE: not tested yet
- EM: yes

**Immunogen**
Synthetic peptide corresponding to AA 39 to 67 from mouse GABA-A receptor γ2 (UniProt Id: P22723)

**Reactivity**
Reacts with: human (P18507), rat (P18508), mouse (P22723), monkey, zebrafish. Other species not tested yet.

**Specificity**
Specific for GABA-A receptor γ2. Does not discriminate between the L and S form.

**Matching control**
224-0P

**Remarks**
- WB: GABA-A receptor gamma2 aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled samples.
- ICC: This antibody is also suitable for the surface staining of living cells. After washing cells with bound antibodies, they can be fixed and visualized with secondary reagents.
- HIC: For best results use the protocol of Schneider Gasser et al., 2006.

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

Access the online factsheet including applicable protocols at https://sysy.com/product/224003 or scan the QR-code.

**Selected References for 224 003**

- The small GTPase ARF6 regulates GABAergic synapse development.
  
  Kim H, Jung H, Jung H, Kwon SK, Ko J, Um JW
  
  Molecular brain (2020) 131: 2. ... WB, ICC, HIC, tested species: rat

- Diazepam Accelerates GABAAR Synaptic Exchange and Alters Intracellular Trafficking.
  
  Lorenz-Guerin JM, Bambino MJ, Das S, Weintraub ST, Jacob TC
  

- Similar GABA receptor subunit composition in somatic and axon initial segment synapses of hippocampal pyramidal cells.
  
  Kerti-Szigeti K, Nusser Z
  
  eLife (2016) 5: ... IHC, EM

- Aberrant expression of S-SCAM causes the loss of GABAergic synapses in hippocampal neurons.
  
  Shin SM, Skar S, Danielson E, Lee SH
  
  Scientific reports (2020) 101: 83. ... WB, ICC; tested species: rat

- Loss of IQSEC3 Disrupts GABAergic Synapse Maintenance and Decreases Somatostatin Expression in the Hippocampus.
  
  

- Receptor protein tyrosine phosphatase delta is not essential for synapse maintenance or transmission at hippocampal synapses.
  
  Han KA, Lee HY, Lim D, Shin J, Yoon TH, Liu X, Um JW, Choi SY, Ko J
  
  Molecular brain (2020) 131: 94. ... WB, ICC; tested species: mouse

- Calsthenin-3 interacts with both α- and β-neurexins in the regulation of excitatory synaptic innervation in specific Schaffer collateral pathways.
  
  
  The Journal of biological chemistry (2020) ... WB, HIC; tested species: mouse

- Reciprocal control of excitatory synapse numbers by Wnt and Wnt inhibitor PRR7 secreted on exosomes.
  
  
  Nature communications (2018) 91: 3434. ... WB, ICC; tested species: rat

- ClpTM1 Limits Forward Trafficking of GABA Receptors to Scale Inhibitory Synaptic Strength.
  
  
  Neuron (2018) 973: 596-610.e6. ... ICC, HIC; tested species: mouse

- GABAAnn and GABAB receptor subunit localization on neurochemically identified neurons of the human subthalamic nucleus.
  
  Wu XH, Song JS, Faull RLM, Waldvogel HJ
  

- GARLH Family Proteins Stabilize GABA Receptors at Synapses.
  
  Yamashaki T, Hoyos-Ramirez E, Martenson JS, Morimoto-Tomita M, Tomita S
  
  Neuron (2017) 935: 1138-1152.e6. ... ICC, HIC; tested species: mouse

- Developmentally dynamic colocalization patterns of DSCAM with adhesion and synaptic proteins in the mouse retina.
  
  de Andrade GB, Kunzelman L, Merrill MM, Fuerst PG
  
  Molecular vision (2014) 20: 1422-33. ... ICC, HIC

- Fast Regulation of GABAAR Diffusion Dynamics by Nogo-A Signaling.
  
  Fricke S, Metzdorf K, Ohm M, Haak S, Heine M, Korte M, Zagrebelsky M
  

- LAR-RPTPs Directly Interact with Neurexins to Coordinate Bidirectional Assembly of Molecular Machineries.
  
  Han KA, Kim YJ, Yoon TH, Kim H, Bae S, Um JW, Choi SY, Ko J
  
  The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) ... ICC, tested species: mouse
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 10 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 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.