Synaptic Systems

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# GFP

**Cat.No. 132 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 200 µl antiserum, lyophilized. For **reconstitution** add 200 µl $H_2O$, then aliquot and store at -20°C until use.<br>For detailed information, see back of the data sheet. |
| Applications | **WB**: 1 : 1000 up to 1 : 20000 (AP staining)<br>**IP**: yes<br>**ICC**: 1 : 500<br>**IHC**: 1 : 500<br>**IHC-P/FFPE**: yes<br>**EM**: yes |
| Immunogen | Recombinant protein corresponding to AA 1 to 238 from jellyfish GFP (UniProt Id: P42212) |
| Specificity | Recognizes GFP, mEGFP, superfolder GFP, most common CFP and YFP variants.Does not cross-react to mCherry, mRFP, dsRed, mTagBFP or their most common derivatives. |

**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/132002 or scan the QR-code.

## Background

**G**reen **f**luorescent **p**rotein **GFP** and its derivates have become universal tools in cell biology. These antibodies allow immunoprecipitation and visualization of GFP fusion proteins on immunoblots and by immunocytochemistry.

## Selected References for 132 002

PBX transcription factors drive pulmonary vascular adaptation to birth.
McCulley DJ, Wienhold MD, Hines EA, Hacker TA, Rogers A, Pewowaruk RJ, Zewdu R, Chesler NC, Selleri L, Sun X
The Journal of clinical investigation (2018) 1282: 655-667. . **IHC, IHC-P; tested species: mouse**

Neuronal palmitoyl acyl transferases exhibit distinct substrate specificity.
Huang K, Sanders S, Singaraja R, Orban P, Cijsouw T, Arstikaitis P, Yanai A, Hayden MR, El-Husseini A
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2009) 238: 2605-15. . **WB, ICC**

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Frontiers in molecular neuroscience (2019) 12: 249. . **WB, ICC; tested species: mouse**

Neuron to glia signaling triggers myelin membrane exocytosis from endosomal storage sites.
Trajkovic K, Dhaunchak AS, Goncalves JT, Wenzel D, Schneider A, Bunt G, Nave KA, Simons M
The Journal of cell biology (2006) 1726: 937-48. . **EM**

Protein kinase C activation promotes the internalization of the human cationic amino acid transporter hCAT-1. A new regulatory mechanism for hCAT-1 activity.
Rotmann A, Strand D, Martiné U, Closs EI
The Journal of biological chemistry (2004) 27952: 54185-92. . **IP**

FEZ1 forms complexes with CRMP1 and DCC to regulate axon and dendrite development.
Chua JY, Ng SJ, Yagensky O, Wanker EE, Chua JJE
eNeuro (2021) : . . **WB; tested species: rat**

Temporal Dynamics and Neuronal Specificity of Grin3a Expression in the Mouse Forebrain.
Murillo A, Navarro AI, Puelles E, Zhang Y, Petros TJ, Pérez-Otaño I
Cerebral cortex (New York, N.Y. : 1991) (2020) : . . **IHC; tested species: mouse**

Phosphorylation on Ser 359 of the α2 subunit in GABA type A receptors down-regulates their density at inhibitory synapses.
Nakamura Y, Morrow DH, Nathanson AJ, Henley JM, Wilkinson KA, Moss SJ
The Journal of biological chemistry (2020) : . . **WB; tested species: rat**

SNAREs define targeting specificity of trafficking vesicles by combinatorial interaction with tethering factors.
Koike S, Jahn R
Nature communications (2019) 101: 1608. . **WB; tested species: human**

Adaptor protein-3 complex is required for Vangl2 trafficking and planar cell polarity of the inner ear.
Tower-Gilchrist C, Zlatic SA, Yu D, Chang Q, Wu H, Lin X, Faundez V, Chen P
Molecular biology of the cell (2019) : mbcE16080592. . **WB; tested species: mouse**

Increased expression of heme-binding protein 1 early in Alzheimer's disease is linked to neurotoxicity.
Yagensky O, Kohansal-Nodehi M, Gunaseelan S, Rabe T, Zafar S, Zerr I, Härtig W, Urlaub H, Chua JJ
eLife (2019) 8: . . **WB; tested species: mouse**

Semaphorin 2b Regulates Sleep-Circuit Formation in the Drosophila Central Brain.
Xie X, Tabuchi M, Corver A, Duan G, Wu MN, Kolodkin AL
Neuron (2019) 1042: 322-337.e14. . **IHC**

Widespread transduction of astrocytes and neurons in the mouse central nervous system after systemic delivery of a self-complementary AAV-PHP.B vector.
Rincon MY, de Vin F, Duqué SI, Fripont S, Castaldo SA, Bouhuijzen-Wenger J, Holt MG
Gene therapy (2018) : . . **IHC; tested species: mouse**

An immunoaffinity-based method for isolating ultrapure adult astrocytes based on ATP1B2 targeting by the ACSA-2 antibody.
Batiuk MY, de Vin F, Duqué SI, Li C, Saito T, Saido T, Fiers M, Belgard TG, Holt MG
The Journal of biological chemistry (2017) 29221: 8874-8891. . **IHC; tested species: mouse**

CLASP2 Links Reelin to the Cytoskeleton during Neocortical Development.
Dillon GM, Tyler WA, Omuro KC, Kambouris J, Tyminski C, Henry S, Haydar TF, Beffert U, Ho A
Neuron (2017) 936: 1344-1358.e5. . **IP**

# 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 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.