

## GAPDH

Cat.No. 247 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

### Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For <b>reconstitution</b> add 200 µl H <sub>2</sub> O, then aliquot and store at -20°C until use. For detailed information, see back of the data sheet.
Applications	<b>WB:</b> 1 : 1000 up to 1 : 5000 (AP staining) <b>IP:</b> not tested yet <b>ICC:</b> not tested yet <b>IHC:</b> not tested yet <b>IHC-P/FFPE:</b> not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 335 from human GAPDH (UniProt Id: P04406)
Reactivity	Reacts with: human (P04406), rat (P04797), mouse (P16858), zebrafish. Other species not tested yet.
Specificity	Specific for GAPDH.
Remarks	Well established as a loading control for Western-blotting.

**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/247002> or scan the QR-code.



## Background

**Glyceraldehyde 3-phosphate dehydrogenase (GAPDH)**, also referred to as G3PDH, catalyzes the sixth step of glycolysis and thus plays a crucial role in the glucose metabolism.

In addition to this well known metabolic function it also exhibits nitrosylase activities and is involved in cellular events like transcription, RNA transport, DNA replication and apoptosis. It is an abundant housekeeping gene and is frequently used as a loading reference in westernblot experiments.

## Selected References for 247 002

Interactome of the amyloid precursor protein APP in brain reveals a protein network involved in synaptic vesicle turnover and a close association with Synaptotagmin-1.

Kohli BM, Pflieger D, Mueller LN, Carbonetti G, Aebbersold R, Nitsch RM, Konietzko U  
Journal of proteome research (2012) 118: 4075-90. . **WB**

Microglial large extracellular vesicles propagate early synaptic dysfunction in Alzheimer's disease.

Gabrielli M, Prada I, Joshi P, Falcicchia C, D'Arrigo G, Rutigliano G, Battocchio E, Zenatelli R, Tozzi F, Radeghieri A, Arancio O, et al.

Brain : a journal of neurology (2022) : . . **WB; tested species: mouse**

Prenatal interleukin 6 elevation increases glutamatergic synapse density and disrupts hippocampal connectivity in offspring.

Mirabella F, Desiato G, Mancinelli S, Fossati G, Rasile M, Morini R, Markicevic M, Grimm C, Amegandjin C, Termanini A, Peano C, et al.

Immunity (2021) 5411: 2611-2631.e8. . **WB; tested species: mouse**

The histone demethylase PHF8 regulates astrocyte differentiation and function.

Iacobucci S, Padilla N, Gabrielli M, Navarro C, Lombardi M, Vicioso-Mantis M, Verderio C, de la Cruz X, Martínez-Balbás MA  
Development (Cambridge, England) (2021) 14812: . . **WB; tested species: mouse**

Nrg1 haploinsufficiency alters inhibitory cortical circuits.

Navarro-Gonzalez C, Carceller H, Benito Vicente M, Serra I, Navarrete M, Domínguez-Canterla Y, Rodríguez-Prieto Á, González-Manteiga A, Fazzari P

Neurobiology of disease (2021) 157: 105442. . **WB; tested species: mouse**

Astrocytes-derived extracellular vesicles in motion at the neuron surface: Involvement of the prion protein.

D'Arrigo G, Gabrielli M, Scaroni F, Swuec P, Amin L, Pegoraro A, Adinolfi E, Di Virgilio F, Cojoc D, Legname G, Verderio C, et al.  
Journal of extracellular vesicles (2021) 109: e12114. . **WB; tested species: rat**

Antidepressants induce profibrotic responses via the lysophosphatidic acid receptor LPA1.

Olianas MC, Dedoni S, Onali P

European journal of pharmacology (2020) : 172963. . **WB; tested species: human**

Spatio-temporal distribution of tubulin-binding cofactors and posttranslational modifications of tubulin in the cochlea of mice.

Juergens L, Bieniussa L, Voelker J, Hagen R, Rak K

Histochemistry and cell biology (2020) 1546: 671-681. . **WB; tested species: human**

Detrimental and protective action of microglial extracellular vesicles on myelin lesions: astrocyte involvement in remyelination failure.

Lombardi M, Parolisi R, Scaroni F, Bonfanti E, Gualerzi A, Gabrielli M, Kerlero de Rosbo N, Uccelli A, Giussani P, Viani P, Garlanda C, et al.

Acta neuropathologica (2019) : . . **WB; tested species: mouse**

A dual-AAV approach restores fast exocytosis and partially rescues auditory function in deaf otoferlin knock-out mice.

Al-Moyed H, Cepeda AP, Jung S, Moser T, Kügler S, Reisinger E

EMBO molecular medicine (2019) 111: . . **WB; tested species: mouse**

Trans-Synaptic Signaling through the Glutamate Receptor Delta-1 Mediates Inhibitory Synapse Formation in Cortical Pyramidal Neurons.

Fossati M, Assendorp N, Gemin O, Colasse S, Dingli F, Arras G, Loew D, Charrier C

Neuron (2019) : . . **WB; tested species: mouse**

Inhibition of TNF-α-induced neuronal apoptosis by antidepressants acting through the lysophosphatidic acid receptor LPA1.

Olianas MC, Dedoni S, Onali P

Apoptosis : an international journal on programmed cell death (2019) : . . **WB; tested species: mouse**

Pentraxin 3 regulates synaptic function by inducing AMPA receptor clustering via ECM remodeling and β1-integrin.

Fossati G, Pozzi D, Canzi A, Mirabella F, Valentino S, Morini R, Ghirardini E, Filipello F, Moretti M, Gotti C, Annis DS, et al.

The EMBO journal (2018) : . . **WB; tested species: mouse**

Altered Expression Profile of IgLON Family of Neural Cell Adhesion Molecules in the Dorsolateral Prefrontal Cortex of Schizophrenic Patients.

Karis K, Eskla KL, Kaare M, Täht K, Tuusov J, Visnapuu T, Innos J, Jayaram M, Timmusk T, Weickert CS, Väli M, et al.

Frontiers in molecular neuroscience (2018) 11: 8. . **WB; tested species: human**

# 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.