SYSY Antibodies

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GAPDH

Cat.No. 247 002; 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. 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 up to 1 : 10000 **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet **Clarity**: external data (see remarks)
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.
Remarks	Well established as a loading control for Western-blotting. **Clarity**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

Glycer**a**ldehyde 3-**p**hosphate **d**e**h**ydrogenase (**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, Aebersold R, Nitsch RM, Konietzko U
Journal of proteome research (2012) 118: 4075-90. . **WB**

Computerized EEG in the comparison of oxyprothepin and fluphenazine decanoat.
Misurec J, Náhunek K, Svestka J, Cesková E
Activitas nervosa superior (1979) 213: 140. . **CLARITY; tested species: human**

The Antidepressant Amitriptyline Upregulates ERK1/2 Signaling and Inhibits Rho-Mediated Responses Induced by Lysophosphatidic Acid in Astroglial Cells.
Olianas MC, Dedoni S, Onali P
International journal of molecular sciences (2026) 278: . . **WB; tested species: rat**

Microglial Extracellular Vesicles Mediate C1q Deposition at the Pre-Synapse and Promote Synaptic Pruning.
D'Arrigo G, Cutugno G, Golia MT, Sironi F, Lombardi M, Colombo SF, Frigerio R, Cretich M, Gagni P, Battocchio E, Barone C, et al.
Journal of extracellular vesicles (2025) 1412: e70173. . **WB; tested species: mouse**

Changes in glial cell activation and extracellular vesicles production precede the onset of disease symptoms in transgenic hSOD1G93A pigs.
Golia MT, Frigerio R, Pucci S, Sironi F, Margotta C, Pasetto L, Testori C, Berrone E, Ingravalle F, Chiari M, Gori A, et al.
Experimental neurology (2024) 374: 114716. . **WB; tested species: pig**

Lysophosphatidic Acid Stimulates Mitogenic Activity and Signaling in Human Neuroblastoma Cells through a Crosstalk with Anaplastic Lymphoma Kinase.
Dedoni S, Olianas MC, Onali P
Biomolecules (2024) 146: . . **WB; tested species: human**

PHF2-mediated H3K9me balance orchestrates heterochromatin stability and neural progenitor proliferation.
Aguirre S, Pappa S, Serna-Pujol N, Padilla N, Iacobucci S, Nacht AS, Vicent GP, Jordan A, de la Cruz X, Martínez-Balbás MA
EMBO reports (2024) : . . **WB; tested species: mouse**

Oleoylethanolamide and Palmitoylethanolamide Enhance IFNβ-Induced Apoptosis in Human Neuroblastoma SH-SY5Y Cells.
Camoglio C, Balla J, Fadda P, Dedoni S
Molecules (Basel, Switzerland) (2024) 297: . . **WB; tested species: human**

Loss of interleukin 1 signaling causes impairment of microglia- mediated synapse elimination and autistic-like behaviour in mice.
Borreca A, Mantovani C, Desiato G, Corradini I, Filipello F, Elia CA, D'Autilia F, Santamaria G, Garlanda C, Morini R, Pozzi D, et al.
Brain, behavior, and immunity (2024) 117: 493-509. . **WB; tested species: mouse**

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**

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**

Access the online factsheet including applicable protocols at https://sysy.com/product/247002 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.