SYSY Antibodies

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EPB41L1 (4.1N)

Cat.No. 276 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

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 H_2O 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	**WB**: 1 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 200 up to 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 5 to 100 from mouse 4.1N (UniProt Id: Q9Z2H5)
Reactivity	Reacts with: rat (Q9WTP0), mouse (Q9Z2H5). Other species not tested yet.

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

Background

The protein 4.1 family consists of a group of skeletal proteins related to the red blood cell (RBC) protein **4.1R**, also known as the erythrocyte membrane skeletal band 4.1 protein EPB 41. This protein family also includes **4.1N** (EPB 4), 4.1B and **4.1G** (EPB 4.1L2).
4.1N and 4.1G are expressed in neuronal and non-neuronal cells in the brain. For 4.1N several splice variants with tissue specific expression patterns have been described. The 135 kDa isoform is most prominent in brain whereas a smaller 100 kDa variant is enriched in peripheral tissues

Selected References for 276 103

Subunit-dependent and subunit-independent rules of AMPA receptor trafficking during chemical long-term depression in hippocampal neurons.
Matsuda S, Yuzaki M
The Journal of biological chemistry (2021) 2972: 100949. . **WB, IP; tested species: mouse**

Selected General References

The membrane-cytoskeletal protein 4.1N is involved in the process of cell adhesion, migration and invasion of breast cancer cells.
Ji Z et al. Exp Ther Med (2012) PubMed:23170136

Regulation of AMPA receptor extrasynaptic insertion by 4.1N, phosphorylation and palmitoylation.
Lin DT et al. Nat. Neurosci. (2009) PubMed:19503082

The function of glutamatergic synapses is not perturbed by severe knockdown of 4.1N and 4.1G expression.
Wozny C et al. J. Cell. Sci. (2009) PubMed:19225127

Band 4.1 proteins are expressed in the retina and interact with both isoforms of the metabotropic glutamate receptor type 8.
Rose M et al. J. Neurochem. (2008) PubMed:18373558

Differential neuronal and glial expression of GluR1 AMPA receptor subunit and the scaffolding proteins SAP97 and 4.1N during rat cerebellar development.
Douyard J et al. J. Comp. Neurol. (2007) PubMed:17335044

Protein 4.1 in forebrain postsynaptic density preparations: enrichment of 4.1 gene products and detection of 4.1R binding proteins.
Scott C et al. Eur. J. Biochem. (2001) PubMed:11179975

A nonerythroid isoform of protein 4.1R interacts with components of the contractile apparatus in skeletal myofibers.
Kontrogianni-Konstantopoulos A et al. Mol. Biol. Cell (2000) PubMed:11071908

A novel neuron-enriched homolog of the erythrocyte membrane cytoskeletal protein 4.1.
Walensky LD et al. J. Neurosci. (1999) PubMed:10414974

Access the online factsheet including applicable protocols at https://sysy.com/product/276103 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.