SYSY Antibodies

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Neuron-glial antigen2 (NG2, Cspg4)

Cat.No. 481 002; 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 : 500 up to 1 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 500 (see remarks) **IHC**: not recommended **IHC-P (FFPE)**: not recommended **IHC-Fr**: not recommended
Immunogen	Synthetic peptide mix corresponding to residues near the carboxy and amino terminus of mouse Neuron-glial antigen 2 (UniProt Id: Q8VHY0)
Reactivity	Reacts with: mouse (Q8VHY0), rat (Q00657). Other species not tested yet.
Remarks	**ICC**: The following fixatives are possible: 4% formaldehyde/PFA, methanol. This antibody shows weak unspecific nuclear staining of neurons.

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

Background

The NG2 proteoglycan is a type I membrane protein that is expressed by a variety of immature cells of several embryonic tissue origins including glia, muscle progenitor cells, and pericytes (1). In the central nervous system, expression of NG2 was originally thought to specify oligodendroglial progenitor cells, but more recent data suggest that NG2-expressing cells encompass a wider range of immature glial cells in white and gray matter. These include glia that make synaptic-like contacts with neurons in the hippocampus and cerebellum (2) and glial cells specifically associated with the nodes of Ranvier (3). Interestingly, many NG2-positive cells are both proliferative and motile or exhibit local process motility (4, 5).

Selected General References

Polydendrocytes: NG2 cells with many roles in development and repair of the CNS.
Nishiyama A et al. Neuroscientist (2007) PubMed:17229976

Glutamatergic synapses on oligodendrocyte precursor cells in the hippocampus.
Bergles DE et al. Nature (2000) PubMed:10821275

Melanoma chondroitin sulphate proteoglycan regulates cell spreading through Cdc42, Ack-1 and p130cas.
Eisenmann KM et al. Nat Cell Biol (1999) PubMed:10587647

Cell-surface glycoprotein of oligodendrocyte progenitors involved in migration.
Niehaus A et al. J Neurosci (1999) PubMed:10366628

Synantocytes: new functions for novel NG2 expressing glia.
Butt AM et al. J Neurocytol () PubMed:14501223

Access the online factsheet including applicable protocols at https://sysy.com/product/481002 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.