SYSY Antibodies

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# Brn3a

**Cat.No. 411 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 100 µl antiserum, lyophilized. For **reconstitution** add 100 µl $H_2O$, then aliquot and store at -20°C until use.<br>Antibodies should be stored at +4°C when still lyophilized. Do not freeze!<br>For detailed information, see back of the data sheet. |
| Applications | **WB**: not tested yet<br>**IP**: not tested yet<br>**ICC**: not tested yet<br>**IHC**: 1 : 2000 up to 1 : 10000 (see remarks)<br>**IHC-P (FFPE)**: 1 : 500 |
| Immunogen | Synthetic peptide corresponding to residues near the amino terminus of mouse Brn3a (UniProt Id: P17208) |
| Reactivity | Reacts with: mouse (P17208).<br>Other species not tested yet. |
| Remarks | **IHC**: For optimal results in retina tissue, follow the retina protocol. |

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

## Background

**Brn3a**, also referred to as POU4F1, RGC-1 or Oct-T1, is a transcription factor highly expressed in the developing peripheral sensory nervous system, in cells of the B- and T-lymphocytic lineages and in certain regions of the CNS e.g. retina, spinal cord, midbrain superior colliculus, red nucleus, nucleus ambiguus, inferior olivary nucleus and habenula. In the retina Brn3a is a well-established marker for retinal ganglion cells.

## Selected References for 411 004

Pou3f1 orchestrates a gene regulatory network controlling contralateral retinogeniculate projections.
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Cell reports (2023) 428: 112985. . **IHC; tested species: mouse**

Oriented cell divisions induce basal progenitors and regulate neural expansion across tissues and species.
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Science advances (2026) 126: eadz6827. . **IHC; tested species: mouse**

NLRX1 limits inflammatory neurodegeneration in the anterior visual pathway.
Gill AJ, Smith MD, Galleguillos D, Garton T, Mace JW, Gadani SP, Kumar S, Pokharel A, Solem K, Potluri S, Hussein O, et al.
Journal of neuroinflammation (2025) 221: 21. . **IHC; tested species: mouse**

Methods to Identify Rat and Mouse Retinal Ganglion Cells in Retinal Flat-Mounts.
Miralles de Imperial-Ollero JA, Vidal-Villegas B, Gallego-Ortega A, Nadal-Nicolás FM, Salinas-Navarro M, Norte-Muñoz M, Di Pierdomenico J, Galindo-Romero C, Agudo-Barriuso M, Vidal-Sanz M, Valiente-Soriano FJ, et al.
Methods in molecular biology (Clifton, N.J.) (2023) 2708: 175-194. . **IHC; tested species: mouse**

Diversity in homeostatic calcium set points predicts retinal ganglion cell survival following optic nerve injury in vivo.
McCracken S, Fitzpatrick MJ, Hall AL, Wang Z, Kerschensteiner D, Morgan JL, Williams PR
Cell reports (2023) 4210: 113165. . **IHC; tested species: mouse**

Alpha retinal ganglion cells in pigmented mice retina: number and distribution.
Gallego-Ortega A, Norte-Muñoz M, Di Pierdomenico J, Avilés-Trigueros M, de la Villa P, Valiente-Soriano FJ, Vidal-Sanz M
Frontiers in neuroanatomy (2022) 16: 1054849. . **IHC; tested species: mouse**

## Selected General References

Brn3a and Brn3b knockout mice display unvaried retinal fine structure despite major morphological and numerical alterations of ganglion cells.
Ghinia MG et al. J. Comp. Neurol. (2016) PubMed:27391320

Brn3a and Islet1 act epistatically to regulate the gene expression program of sensory differentiation.
Dykes IM et al. J. Neurosci. (2011) PubMed:21734270

Regulation of NGFI-A (Egr-1) gene expression by the POU domain transcription factor Brn-3a.
Smith MD et al. Brain Res. Mol. Brain Res. (1999) PubMed:10640682

Targeted deletion of the mouse POU domain gene Brn-3a causes selective loss of neurons in the brainstem and trigeminal ganglion, uncoordinated limb movement, and impaired suckling.
Xiang M et al. Proc. Natl. Acad. Sci. U.S.A. (1996) PubMed:8876243

The different activities of the two activation domains of the Brn-3a transcription factor are dependent on the context of the binding site.
Budhram-Mahadeo V et al. J. Biol. Chem. (1996) PubMed:8621561

The Brn-3 family of POU-domain factors: primary structure, binding specificity, and expression in subsets of retinal ganglion cells and somatosensory neurons.
Xiang M et al. J. Neurosci. (1995) PubMed:7623109

Access the online factsheet including applicable protocols at https://sysy.com/product/411004 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.