SYSY Antibodies

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# NeuroD1

**Cat.No. 503 003; 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)<br>**IP**: not tested yet<br>**ICC**: 1 : 1000 up to 1 : 2000<br>**IHC**: 1 : 2000 (see remarks)<br>**IHC-P (FFPE)**: 1 : 1000 up to 1 : 4000 |
| Immunogen | Recombinant protein corresponding to the N-terminal part of mouse NeuroD1 (UniProt Id: Q60867) |
| Reactivity | Reacts with: mouse (Q60867), rat (Q64289).<br>Other species not tested yet. |
| Remarks | **IHC**: Antigen retrieval with citrate buffer pH 6 can be applied to improve the signal-to-noise ratio. |

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

## Background

**NeuroD1**, also referred to as **Neurogenic differentiation factor 1** or **BETA2**, is a member of the basic helix-loop-helix (bHLH) family of transcription factors. It forms heterodimers with other bHLH proteins and activates transcription of genes with E box-containing promoters. It is expressed in the developing brain and pancreas as well as in differentiating neurons in both the central and peripheral nervous system (1, 2, 3).
NeuroD1 acts as a differentiation factor during neurogenesis (1, 4). It regulates the development of the mammalian retina, inner ear sensory neurons, granule cells forming either the cerebellum or the dentate gyrus cell layer of the hippocampus (1, 2, 3), endocrine islet cells of the pancreas and enteroendocrine cells of the small intestine (5).
Mice lacking NeuroD1 become severely diabetic, show several developmental and functional defects throughout the body, and die shortly after birth (1,2,5).
Human mutations have been linked to a number of types of diabetes, including type I diabetes mellitus and maturity-onset diabetes of the young (1).

## Selected General References

NeuroD: the predicted and the surprising.
Chae JH et al. Mol Cells (2004) PubMed:15650322

In vivo direct reprogramming of reactive glial cells into functional neurons after brain injury and in an Alzheimer's disease model.
Guo Z et al. Cell Stem Cell (2014) PubMed:24360883

Expression of neuroD/BETA2 in mitotic and postmitotic neuronal cells during the development of nervous system.
Lee JK et al. Dev Dyn (2000) PubMed:10767080

NeuroD is required for differentiation of the granule cells in the cerebellum and hippocampus.
Miyata T et al. Genes Dev (1999) PubMed:10398678

Diabetes, defective pancreatic morphogenesis, and abnormal enteroendocrine differentiation in BETA2/neuroD-deficient mice.
Naya FJ et al. Genes Dev (1997) PubMed:9308961

Access the online factsheet including applicable protocols at https://sysy.com/product/503003 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.