SYSY Antibodies

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NeuroD2

Cat.No. 498 003; 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**: not tested yet **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 2000 up to 1 : 5000 (see remarks) **IHC-P (FFPE)**: 1 : 500 up to 1 : 1000
Immunogen	Recombinant protein corresponding to the N-terminal part of mouse NeuroD2 (UniProt Id: Q62414)
Reactivity	Reacts with: mouse (Q62414), rat (Q63689). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required.

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

Background

NeuroD2, also referred to as **Neurogenic differentiation factor 2** or **NDRF**, is a highly conserved member of the NeuroD family of basic helix-loop-helix (bHLH) transcription factors. It is highly expressed during development, but it is also present in postmitotic neurons in adulthood, for example in the cerebellum, hippocampus, and cerebral cortex (1).
It is assumed that NeuroD2 acts as a heterodimer with other bHLH transcription factors. It can induce transcription from neuron-specific promoters containing a conserved E-box DNA sequence (1).
NeuroD2 plays a crucial role in the development of the central nervous system (2). It induces neuronal differentiation and promotes neuronal survival (1, 2). Its spectrum of effects includes involvement in the neuronal development in the cerebellum and hippocampus (2, 3), amygdala development and emotional learning (4), and contribution to the terminal neuron localization within the cortical plate (5).
Transgenic mice lacking NeuroD2 do not survive and exhibit severe neurodevelopmental defects (2).

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected General References

NeuroD2 and neuroD3: distinct expression patterns and transcriptional activation potentials within the neuroD gene family.
McCormick MB et al. Mol Cell Biol (1996) PubMed:8816493

Terminal neuron localization to the upper cortical plate is controlled by the transcription factor NEUROD2.
Guzelsoy G et al. Sci Rep (2019) PubMed:31873146

NeuroD2 regulates the development of hippocampal mossy fiber synapses.
Wilke SA et al. Neural Dev (2012) PubMed:22369234

The dosage of the neuroD2 transcription factor regulates amygdala development and emotional learning.
Lin CH et al. Proc Natl Acad Sci U S A (2005) PubMed:16203979

NeuroD2 is necessary for development and survival of central nervous system neurons.
Olson JM et al. Dev Biol (2001) PubMed:11356028

Access the online factsheet including applicable protocols at https://sysy.com/product/498003 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.