

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 ₂ O 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: 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 (10mM citrate, pH 6.0, overnight at 60°C) is recommended.

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).

Selected General References

NeuroD2 and neuroD3: distinct expression patterns and transcriptional activation potentials within the neuroD gene family. McCormick MB, Tamimi RM, Snider L, Asakura A, Bergstrom D, Tapscott SJ. *Molecular and cellular biology* (1996) 1610: 5792-800. .

Terminal neuron localization to the upper cortical plate is controlled by the transcription factor NEUROD2. Guzelsoy G, Akkaya C, Atak D, Dunn CD, Kabakcioglu A, Ozlu N, Ince-Dunn G. *Scientific reports* (2019) 91: 19697. .

NeuroD2 regulates the development of hippocampal mossy fiber synapses. Wilke SA, Hall BJ, Antonios JK, Denardo LA, Otto S, Yuan B, Chen F, Robbins EM, Tiglio K, Williams ME, Qiu Z, et al. *Neural development* (2012) 7: 9. .

The dosage of the neuroD2 transcription factor regulates amygdala development and emotional learning. Lin CH, Hansen S, Wang Z, Storm DR, Tapscott SJ, Olson JM. *Proceedings of the National Academy of Sciences of the United States of America* (2005) 10241: 14877-82. .

NeuroD2 is necessary for development and survival of central nervous system neurons. Olson JM, Asakura A, Snider L, Hawkes R, Strand A, Stoeck J, Hallahan A, Pritchard J, Tapscott SJ. *Developmental biology* (2001) 2341: 174-87. .

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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.