

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 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: 1 : 1000 (AP-staining) IP: not tested yet ICC: 1 : 1000 up to 1 : 2000 IHC: 1 : 2000 (see remarks) IHC-P: 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). Other species not tested yet.
Remarks	IHC: Antigen retrieval (citrate buffer pH 6) can be used to improve the signal in immunohistochemical staining.

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, Stein GH, Lee JE
Molecules and cells (2004) 183: 271-88. .

In vivo direct reprogramming of reactive glial cells into functional neurons after brain injury and in an Alzheimer's disease model.

Guo Z, Zhang L, Wu Z, Chen Y, Wang F, Chen G
Cell stem cell (2014) 142: 188-202. .

Expression of neuroD/BETA2 in mitotic and postmitotic neuronal cells during the development of nervous system.

Lee JK, Cho JH, Hwang WS, Lee YD, Reu DS, Suh-Kim H

Developmental dynamics : an official publication of the American Association of Anatomists (2000) 2174: 361-7. .

NeuroD is required for differentiation of the granule cells in the cerebellum and hippocampus.

Miyata T, Maeda T, Lee JE

Genes & development (1999) 1313: 1647-52. .

Diabetes, defective pancreatic morphogenesis, and abnormal enteroendocrine differentiation in BETA2/neuroD-deficient mice.

Naya FJ, Huang HP, Qiu Y, Mutoh H, DeMayo FJ, Leiter AB, Tsai MJ

Genes & development (1997) 1118: 2323-34. .

Access the online factsheet including applicable protocols
at <https://susy.com/product/503003> 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.