

## Neuroigin3

Cat.No. 129 113; 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 <b>reconstitution</b> add 50 µl H <sub>2</sub> 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	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> yes <b>ICC:</b> yes <b>IHC:</b> not tested yet <b>IHC-P:</b> 1 : 1000 up to 1 : 2500
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse Neuroigin 3 (UniProt Id: Q8BYM5)
Reactivity	Reacts with: rat (Q62889), mouse (Q8BYM5). No signal: zebrafish. Other species not tested yet.
Specificity	K.O. validated PubMed: <a href="https://pubmed.ncbi.nlm.nih.gov/31002480/">31002480</a>
Matching control	129-3P

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

## Background

**Neuroigin3** form a family of post-synaptic cell surface molecules that interact with  $\beta$ -neurexins. They are 110-120 kDa polypeptides with homology to acetylcholine esterase. Neuroigin1 and **neuroigin3** are specifically localized to post-synaptic densities of excitatory synapses whereas neuroigin2 is found exclusively on inhibitory synapses.

Mutations in neuroigin3 and neuroigin4 have been implicated with a rare, heritable form of autism.

## Selected References for 129 113

A unique intracellular tyrosine in neuroigin-1 regulates AMPA receptor recruitment during synapse differentiation and potentiation.

Letellier M, Sziber Z, Chamma I, Saphy C, Papisideri I, Tessier B, Sainlos M, Czöndör K, Thoumine O  
Nature communications (2018) 91: 3979. . **WB, IP; tested species: rat**

Neuroigin-3 and Neuroigin-4X form Nanoscopic clusters and regulate growth cone organization and size.  
Gatford NJF, Deans PJM, Duarte RRR, Chennell G, Sellers KJ, Raval P, Srivastava DP  
Human molecular genetics (2021) : . . **WB, ICC; tested species: mouse**

Colonic dilation and altered ex vivo gastrointestinal motility in the neuroigin-3 knockout mouse.

Leembruggen AJL, Balasuriya GK, Zhang J, Schokman S, Swiderski K, Bornstein JC, Nithianantharajah J, Hill-Yardin EL  
Autism research : official journal of the International Society for Autism Research (2019) : . . **WB, IP; KO verified; tested species: mouse**

Key roles of C2/GAP domains in SYNGAP1-related pathophysiology.

Katsanevaki D, Till SM, Buller-Peralta I, Nawaz MS, Louros SR, Kappal V, Tiwari S, Walsh D, Anstey NJ, Petrović NG, Cormack A, et al.

Cell reports (2024) 439: 114733. . **WB; tested species: rat**

TSPAN5 Enriched Microdomains Provide a Platform for Dendritic Spine Maturation through Neuroigin-1 Clustering.  
Moretto E, Longatti A, Murru L, Chamma I, Sessa A, Zapata J, Hosy E, Sainlos M, Saint-Pol J, Rubinstein E, Choquet D, et al.  
Cell reports (2019) 295: 1130-1146.e8. . **WB; tested species: mouse**

Neuroigin 1, 2, and 3 Regulation at the Synapse: FMRP-Dependent Translation and Activity-Induced Proteolytic Cleavage.

Chmielewska JJ, Kuzniewska B, Milek J, Urbanska K, Dziembowska M  
Molecular neurobiology (2018) : . . **WB; tested species: mouse**

UPR activation specifically modulates glutamate neurotransmission in the cerebellum of a mouse model of autism.

Trobiani L, Favaloro FL, Di Castro MA, Di Mattia M, Cariello M, Miranda E, Canterini S, De Stefano ME, Comoletti D, Limatola C, De Jaco A, et al.

Neurobiology of disease (2018) : . . **WB; tested species: mouse**

Isoform-specific cleavage of neuroigin-3 reduces synapse strength.

Bemben MA, Nguyen TA, Li Y, Wang T, Nicoll RA, Roche KW  
Molecular psychiatry (2018) : . . **WB; tested species: rat**

Molecular Dissection of Neuroigin 2 and Slitrk3 Reveals an Essential Framework for GABAergic Synapse Development.

Li J, Han W, Pelkey KA, Duan J, Mao X, Wang YX, Craig MT, Dong L, Petralia RS, McBain CJ, Lu W, et al.  
Neuron (2017) 964: 808-826.e8. . **WB; tested species: mouse**

Dysfunctional cerebellar Purkinje cells contribute to autism-like behaviour in Shank2-deficient mice.

Peter S, Ten Brinke MM, Stedehouder J, Reinelt CM, Wu B, Zhou H, Zhou K, Boele HJ, Kushner SA, Lee MG, Schmeisser MJ, et al.  
Nature communications (2016) 7: 12627. . **WB; tested species: mouse**

## Selected General References

Neuroigin 1 is a postsynaptic cell-adhesion molecule of excitatory synapses.

Song JY et al. Proc. Natl. Acad. Sci. U.S.A. (1999) PubMed:9927700

Access the online factsheet including applicable protocols at <https://sysy.com/product/129113> 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.