

Neuroigin1 extracellular domain

Cat.No. 129 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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: not tested yet IHC: not tested yet IHC-P: not tested yet
Immunogen	Recombinant protein corresponding to AA 46 to 165 from rat Neuroigin1 (UniProt Id: Q62765)
Reactivity	Reacts with: rat (Q62765), mouse (Q99K10). No signal: zebrafish. Other species not tested yet.
Specificity	K.O. validated
Matching control	129-0P

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

Background

Neuroigins form a family of postsynaptic cell surface molecules that interact with β-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 129 003

Hemisynapse Formation Between Target Astrocytes and Cortical Neuron Axons in vitro.
Teng Z, Gottmann K
Frontiers in molecular neuroscience (2022) 15: 829506. . **ICC; tested species: mouse**

Overexpression of the cell adhesion protein neuroigin-1 induces learning deficits and impairs synaptic plasticity by altering the ratio of excitation to inhibition in the hippocampus.
Dahlhaus R, Hines RM, Eadie BD, Kannangara TS, Hines DJ, Brown CE, Christie BR, El-Husseini A
Hippocampus (2010) 20: 305-22. . **WB**

A delay in vesicle endocytosis by a C-terminal fragment of N-cadherin enhances Aβ synaptotoxicity.
Teng Z, Kartalou GI, Dagar S, Fraering PC, Lessmann V, Gottmann K
Cell death discovery (2023) 91: 444. . **WB; tested species: mouse**

Dysregulation of AMPA Receptor Trafficking and Intracellular Vesicular Sorting in the Prefrontal Cortex of Dopamine Transporter Knock-Out Rats.
Targa G, Mottarlini F, Rizzi B, Leo D, Caffino L, Fumagalli F
Biomolecules (2023) 133: . . **WB; tested species: rat**

A novel synaptic junction preparation for the identification and characterization of cleft proteins.
Burch A, Tao-Cheng JH, Dosemeci A
PloS one (2017) 123: e0174895. . **WB; tested species: rat**

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

Activity-dependent validation of excitatory versus inhibitory synapses by neuroigin-1 versus neuroigin-2.
Chubykin AA et al. Neuron (2007) PubMed:17582332

Dissection of synapse induction by neuroigin: effect of a neuroigin mutation associated with autism.
Chubykin AA et al. J. Biol. Chem. (2005) PubMed:15797875

Neuroigin 2 is exclusively localized to inhibitory synapses.
Varoqueaux F et al. Eur. J. Cell Biol. (2004) PubMed:15540461

Synaptic targeting of neuroigin is independent of neurexin and SAP90/PSD95 binding.
Dresbach T et al. Mol. Cell. Neurosci. (2004) PubMed:15519238

The making of neurexins.
Missler M et al. J. Neurochem. (1998) PubMed:9751164

Structures, alternative splicing, and neurexin binding of multiple neuroigin.
Ichtchenko K et al. J. Biol. Chem. (1996) PubMed:8576240

Neuroigin 1: a splice site-specific ligand for beta-neurexins.
Ichtchenko K et al. Cell (1995) PubMed:7736595

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC et al. Nature (1995) PubMed:7791897

Access the online factsheet including applicable protocols at <https://sysy.com/product/129003> 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.