

Neuroigin1

Cat.No. 129 111; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 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 recommended IHC: not recommended IHC-P: not tested yet
Clone	4C12
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 695 from rat Neuroigin1 (UniProt Id: Q62765)
Reactivity	Reacts with: rat (Q62765), mouse (Q99K10), human (Q8N2Q7). Other species not tested yet.
Specificity	Epitope present in all 4 isoforms of neuroigin 1; no cross reactivity to neuroigin 2, 3, 4. K.O. validated PubMed: 31801062

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

Background

Neuroigin 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 129 111

Dissection of synapse induction by neuroigin: effect of a neuroigin mutation associated with autism. Chubykin AA, Liu X, Comoletti D, Tsigelny I, Taylor P, Südhof TC
The Journal of biological chemistry (2005) 28023: 22365-74. . **WB, ICC**

Preoperative environment enrichment preserved neuroigin 1 expression possibly via epigenetic regulation to reduce postoperative cognitive dysfunction in mice.
Min J, Lai Z, Wang H, Zuo Z
CNS neuroscience & therapeutics (2021) : . **WB, UPTAKE; tested species: mouse**

Neuroigin 1 is dynamically exchanged at postsynaptic sites.
Schapitz IU, Behrend B, Pechmann Y, Lappe-Siefke C, Kneussel SJ, Wallace KE, Stempel AV, Buck F, Grant SG, Schweizer M, Schmitz D, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3038: 12733-44. . **WB, IP; tested species: rat**

The Adhesion-GPCR BAI1 Promotes Excitatory Synaptogenesis by Coordinating Bidirectional Trans-synaptic Signaling.
Tu YK, Duman JG, Tolias KF
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) 3839: 8388-8406. . **WB, ICC; KD verified; tested species: human,cos cells**

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**

4E-BP2-dependent translation in cerebellar Purkinje cells controls spatial memory but not autism-like behaviors.
Hooshmandi M, Truong VT, Fields E, Thomas RE, Wong C, Sharma V, Gantois I, Soriano Roque P, Chalkiadaki K, Wu N, Chakraborty A, et al.
Cell reports (2021) 354: 109036. . **IHC; tested species: mouse**

MDGAs perform activity-dependent synapse type-specific suppression via distinct extracellular mechanisms.
Kim S, Jang G, Kim H, Lim D, Han KA, Um JW, Ko J
Proceedings of the National Academy of Sciences of the United States of America (2024) 12126: e2322978121. . **WB; tested species: mouse**

Biochemical Properties of Synaptic Proteins Are Dependent on Tissue Preparation: NMDA Receptor Solubility Is Regulated by the C-Terminal Tail.
Won S, Sweeney CL, Roche KW
Journal of cellular biochemistry (2024) : e30664. . **WB; tested species: human,mouse,rat**

A Neuroigin-1 mutation associated with Alzheimer's disease produces memory and age-dependent impairments in hippocampal plasticity.
Arias-Aragón F, Tristán-Clavijo E, Martínez-Gallego I, Robles-Lanuza E, Coatl-Cuaya H, Martín-Cuevas C, Sánchez-Hidalgo AC, Rodríguez-Moreno A, Martínez-Mir A, Scholl FG
iScience (2023) 266: 106868. . **WB; tested species: mouse**

Reduced epilepsy development in synapsin 2 knockout mice with autistic behavior following early systemic treatment with interleukin-6 receptor antibody.
Bäckström F, Ahl M, Wickham J, Ekdahl CT
Epilepsy research (2023) 191: 107114. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/129111> 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.