

Neuroigin2

Cat.No. 129 202; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

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|----------------------------|---|
| Reconstitution/ Storage | 200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°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 (see remarks) IHC: not recommended IHC-P: not tested yet |
| Immunogen | Synthetic peptide corresponding to AA 732 to 749 and 750 to 767 from rat Neuroigin2 (UniProt Id: Q62888) |
| Reactivity | Reacts with: human (Q8NFZ4), rat (Q62888), mouse (Q69ZK9), monkey, ape, cow. Other species not tested yet. |
| Specificity | K.O. validated |
| Remarks | ICC: The affinity purified antibody (cat. no. 129 203) is highly recommended for ICC. |

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 129 202

PSD-95 deficiency alters GABAergic inhibition in the prefrontal cortex.

McEachern EP, Coley AA, Yang SS, Gao WJ

Neuropharmacology (2020) 179: 108277. . **WB, IP; tested species: mouse**

Phosphorylation of neuroigin-2 by PKA regulates its cell surface abundance and synaptic stabilization.

Halff EF, Hannan S, Kwanthongdee J, Lesept F, Smart TG, Kittler JT

Science signaling (2022) 15739: eabg2505. . **WB; tested species: rat**

Chemico-genetic discovery of astrocytic control of inhibition in vivo.

Takano T, Wallace JT, Baldwin KT, Purkey AM, Uezu A, Courtland JL, Soderblom EJ, Shimogori T, Maness PF, Eroglu C, Soderling SH, et al.

Nature (2020) : . . **WB; tested species: mouse**

LAR-RPTPs Directly Interact with Neurexins to Coordinate Bidirectional Assembly of Molecular Machineries.

Han KA, Kim YJ, Yoon TH, Kim H, Bae S, Um JW, Choi SY, Ko J

The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **WB; tested species: rat**

Elevated protein synthesis in microglia causes autism-like synaptic and behavioral aberrations.

Xu ZX, Kim GH, Tan JW, Riso AE, Sun Y, Xu EY, Liao GY, Xu H, Lee SH, Do NY, Lee CH, et al.

Nature communications (2020) 111: 1797. . **WB; tested species: mouse**

A sex difference in the response of the rodent postsynaptic density to synGAP haploinsufficiency.

Mastro TL, Preza A, Basu S, Chattarji S, Till SM, Kind PC, Kennedy MB

eLife (2020) 9: . . **WB; tested species: rat**

SNX27-Mediated Recycling of Neuroigin-2 Regulates Inhibitory Signaling.

Halff EF, Szulc BR, Lesept F, Kittler JT

Cell reports (2019) 299: 2599-2607.e6. . **WB; tested species: rat**

Autism and Schizophrenia-Associated CYFIP1 Regulates the Balance of Synaptic Excitation and Inhibition.

Davenport EC, Szulc BR, Drew J, Taylor J, Morgan T, Higgs NF, López-Doménech G, Kittler JT

Cell reports (2019) 268: 2037-2051.e6. . **WB; tested species: mouse**

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; tested species: rat**

GABAergic deficits and schizophrenia-like behaviors in a mouse model carrying patient-derived neuroigin-2 R215H mutation.

Jiang DY, Wu Z, Forsyth CT, Hu Y, Yee SP, Chen G

Molecular brain (2018) 111: 31. . **WB; tested species: mouse**

Structural Insights into Modulation of Neurexin-Neuroigin Trans-synaptic Adhesion by MDGA1/Neuroigin-2 Complex.

Kim JA, Kim D, Won SY, Han KA, Park D, Cho E, Yun N, An HJ, Um JW, Kim E, Lee JO, et al.

Neuron (2017) 946: 1121-1131.e6. . **WB; tested species: rat**

Assembly rules for GABAA receptor complexes in the brain.

Martenson JS, Yamasaki T, Chaudhury NH, Albrecht D, Tomita S

eLife (2017) 6: . . **WB; tested species: mouse**

Access the online factsheet including applicable protocols
at <https://sysy.com/product/129202> 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.