SYSY Antibodies

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GluN2B (NMDAR2B)

Cat.No. 244 103; 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_2O 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**: yes (see remarks) **ICC**: not tested yet **IHC**: external data (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 42 to 60 from rat GluN2B (UniProt Id: Q00960)
Reactivity	Reacts with: rat (Q00960), mouse (Q01097). Other species not tested yet.
Specificity	Specific for GluN 2B, no cross-reactivity to GluN 2A.
Matching control	244-1P
Remarks	**IP**: For most effective IP use the solubilization protocol described in the ELISA protocol. Consider that protein-protein interaction may be affected. **IHC**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols.

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

Background

GluNs (NMDA-receptors) represent a class of glutamate receptors that are of central importance in synaptic plasticity. Multiple NMDA receptor subtypes exist: GluN1 and **GluN2 A-D**. GluN1 is the most important as it is required for activity. NMDA-receptors allow Ca^{2+} influx and are thought to trigger Ca^{2+} dependent postsynaptic processes involved in long term potentiation and depression.

Selected References for 244 103

Chronic Stress Triggers Expression of Immediate Early Genes and Differentially Affects the Expression of AMPA and NMDA Subunits in Dorsal and Ventral Hippocampus of Rats.
Pacheco A, Aguayo FI, Aliaga E, Muñoz M, García-Rojo G, Olave FA, Parra-Fiedler NA, García-Pérez A, Tejos-Bravo M, Rojas PS, Parra CS, et al.
Frontiers in molecular neuroscience (2017) 10: 244. . **WB, IHC; tested species: rat**

NWD1 facilitates synaptic transmission and contributes to neuropathic pain.
Wu Y, Fu Q, Huang X, Luo Y, Wan S, Peng M, Su S, Xu X, Li Y, Li X, Sun D, et al.
Neuropharmacology (2021) 205: 108919. . **IHC; tested species: mouse**

Chronic mild corticosterone exposure during adolescence enhances behaviors and upregulates neuroplasticity-related proteins in rat hippocampus.
Li J, Li Y, Sun Y, Wang H, Liu X, Zhao Y, Wang H, Su Y, Si T
Progress in neuro-psychopharmacology & biological psychiatry (2019) 89: 400-411. . **WB; tested species: rat**

Chronic Toxoplasma infection is associated with distinct alterations in the synaptic protein composition.
Lang D, Schott BH, van Ham M, Morton L, Kulikovskaja L, Herrera-Molina R, Pielot R, Klawonn F, Montag D, Jänsch L, Gundelfinger ED, et al.
Journal of neuroinflammation (2018) 151: 216. . **WB; tested species: mouse**

Hippocampal Memory Recovery After Acute Stress: A Behavioral, Morphological and Molecular Study.
Aguayo FI, Tejos-Bravo M, Díaz-Véliz G, Pacheco A, García-Rojo G, Corrales W, Olave FA, Aliaga E, Ulloa JL, Avalos AM, Román-Albasini L, et al.
Frontiers in molecular neuroscience (2018) 11: 283. . **WB; tested species: rat**

Parental THC exposure leads to compulsive heroin-seeking and altered striatal synaptic plasticity in the subsequent generation.
Szutorisz H, DiNieri JA, Sweet E, Egervari G, Michaelides M, Carter JM, Ren Y, Miller ML, Blitzer RD, Hurd YL
Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology (2014) 396: 1315-23. . **WB; tested species: rat**

Novel application of stem cell-derived neurons to evaluate the time- and dose-dependent progression of excitotoxic injury.
Gut IM, Beske PH, Hubbard KS, Lyman ME, Hamilton TA, McNutt PM
PloS one (2013) 85: e64423. . **WB**

Selected General References

NMDA receptor surface mobility depends on NR2A-2B subunits.
Groc L et al. Proc. Natl. Acad. Sci. U.S.A. (2006) PubMed:17124177

Synaptic distribution of the NR1, NR2A and NR2B subunits of the N-methyl-d-aspartate receptor in the rat lumbar spinal cord revealed with an antigen-unmasking technique.
Nagy GG et al. Eur. J. Neurosci. (2004) PubMed:15610162

NMDA receptors and PSD-95 are found in attachment plaques in cerebellar granular layer glomeruli.
Petralia RS et al. Eur. J. Neurosci. (2002) PubMed:11876787

A developmental change in NMDA receptor-associated proteins at hippocampal synapses.
Sans N et al. J. Neurosci. (2000) PubMed:10648730

Access the online factsheet including applicable protocols at https://sysy.com/product/244103 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.