

## GluN2A/B (NMDAR2A/B)

Cat.No. 244 003; 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 <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 (see remarks) <b>ICC:</b> 1 : 250 <b>IHC:</b> not tested yet <b>IHC-P:</b> not tested yet
Immunogen	Synthetic peptide corresponding to AA 1448 to 1464 from mouse GluN2A (UniProt Id: P35436)
Reactivity	Reacts with: rat (Q00959, Q00960), mouse (P35436, Q01097). Other species not tested yet.
Specificity	Cross-reacts to GluN 2B due to sequence homology.
Matching control	244-OP
Remarks	<b>IP:</b> Denaturing IP-protocol is recommended. Protein-protein interactions may be affected.

**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<sup>2+</sup> influx and are thought to trigger Ca<sup>2+</sup> dependent postsynaptic processes involved in long term potentiation and depression.

### Selected References for 244 003

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, ICC; tested species: mouse**

INSIGHT: an accessible multi-scale, multi-modal 3D spatial biology platform.  
Yau CN, Hung JTS, Campbell RAA, Wong TCY, Huang B, Wong BTY, Chow NKN, Zhang L, Tsoi EPL, Tan Y, Li JJX, et al.  
Nature communications (2024) 151: 10888. . **IHC; tested species: mouse**

Astrocyte GluN2C NMDA receptors control basal synaptic strengths of hippocampal CA1 pyramidal neurons in the stratum radiatum.  
Chipman PH, Fung CCA, Pazo Fernandez A, Sawant A, Tedoldi A, Kawai A, Ghimire Gautam S, Kurosawa M, Abe M, Sakimura K, Fukai T, et al.  
eLife (2021) 10: . . **WB; tested species: mouse**

### 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.  
Petrálie 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

Neuronal and glial localization of NR1 and NR2A/B subunits of the NMDA receptor in the human cerebral cortex.  
Conti F et al. Cereb. Cortex (1999) PubMed:10220224

The NMDA receptor subunits NR2A and NR2B show histological and ultrastructural localization patterns similar to those of NR1.  
Petrálie RS et al. J. Neurosci. (1994) PubMed:7931566

Heteromeric NMDA receptors: molecular and functional distinction of subtypes.  
Monyer H et al. Science (1992) PubMed:1350383

Access the online factsheet including applicable protocols at <https://sysy.com/product/244003> 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 at 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.