

Anti-NMDA Receptor, NR2A Subunit N-Terminus Antibody

Product Data Sheet · P/N 74103 Rev 01 · Reissued 2026-09-19 (layout only)

Product code	Pack size
P40021-100	100 µL
Host Species	Rabbit (Polyclonal)
Mr (kDa)	180

Description

The ion channels activated by glutamate are typically divided into two classes. Glutamate receptors that are activated by kainate and α -amino-3-hydroxy-5-methyl-4-isoxalone propionic acid (AMPA) are known as kainate/AMPA receptors (K/AMPA). Those that are sensitive to N-methyl-D-aspartate (NMDA) are designated NMDA receptors (NMDAR). The NMDAR plays an essential role in memory, neuronal development and it has also been implicated in several disorders of the central nervous system including Alzheimer's, epilepsy and ischemic neuronal cell death (Grosshans et al., 2002; Wenthold et al., 2003; Carroll and Zukin, 2002). The NMDA receptor is also one of the principal molecular targets for alcohol in the CNS (Lovinger et al., 1989; Alvestad et al., 2003; Snell et al., 1996). The NMDAR is also potentiated by protein phosphorylation (Lu et al., 1999). The rat NMDAR1 (NR1) was the first subunit of the NMDAR to be cloned. The NR1 protein can form NMDA activated channels when expressed in *Xenopus* oocytes but the currents in such channels are much smaller than those seen in situ. Channels with more physiological characteristics are produced when the NR1 subunit is combined with one or more of the NMDAR2 (NR2 A-D) subunits.

Immunogen

Peptide from the N-terminus of the NR2A subunit of rat NMDA receptor.

Species Reactivity

The antibody has been directly tested for reactivity in Western blots rat tissue. It is anticipated that the antibody will also react with bovine, canine, and mouse tissues based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

Physical State

Liquid; Buffer contents: 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per mL BSA and 50% glycerol

Purification Method

Prepared from rabbit serum by affinity purification using a column to which the peptide immunogen was coupled.

Recommended Antibody Dilutions

WB: 1:1000

IHC: 1:500

Storage/Stability

Stable at -20 °C for at least 1 year.

For long term storage -20 °C is recommended

Shipping Conditions

Domestic: Blue Ice

International: Blue Ice or Dry Ice

References

1) Alvestad RM et al. (2003) J Biol Chem 278:11020-

11025.

2) Carroll RC et al. (2002) Trends Neurosci 25:571-577.

3) Grosshans DR et al. (2002) Nat Neurosci 5:27-33.

4) Lovinger DM et al. (1989) Science 243:1721-1724.

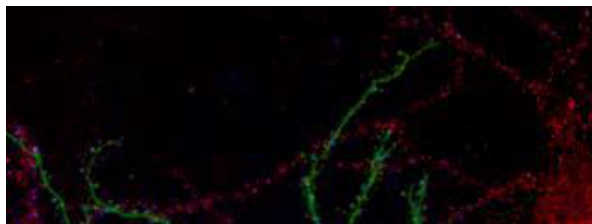
5) Lu W-Y et al. (1999) Nature Neurosci 2:331-338.

6) Snell LD et al. (1996) Mol Brain Res 40:71-78.

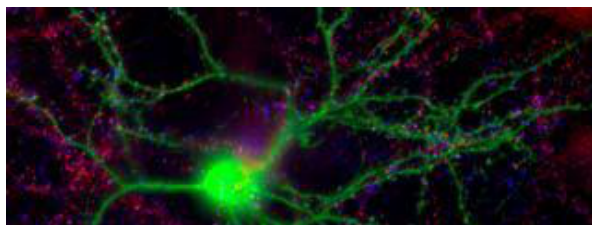
7) Wenthold RJ et al. (2003) Annu Rev Pharmacol Toxicol 43:335-358.



Western Blot Western blot of 10 µg of rat hippocampal lysate showing specific immunolabeling of the ~ 180k NR2A subunit.



Immunostaining 21 DIV nucleofected mouse striatal neuron (green) co- cultured with cortical neurons showing nice punctate labeling of the N-terminal NR2A subunit (red) in both the medium spiny neurons and the large pyramidal cell in the upper right. Photo courtesy of Dr. A.J. Milnerwood, Dr. Lynn Raymond Lab, University of British Columbia.



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