

PRODUCT DATA SHEET

Product Name: ANTI-NMDA RECEPTOR, NR2A SUBUNIT N-TERMINUS ANTIBODY

Product Code: P40021-100

Pack Size: 100 µL

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.

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

Storage/Stability: Stable at -20 °C for at least 1 year. For long term storage -20 °C is recommended

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

Shipping Conditions: Domestic: Blue Ice
 International: Blue Ice or Dry Ice

Host Species: Rabbit (Polyclonal)

Mr (kDa): 180

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.

Recommended Antibody Dilutions:

WB: 1:1000

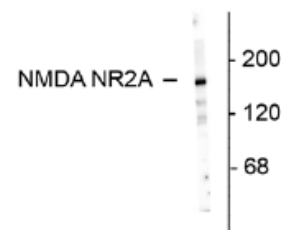
IHC: 1:500

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.

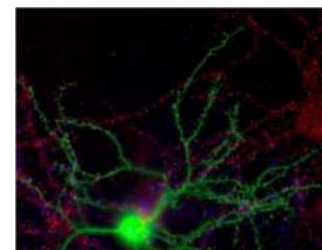
Western Blot

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.



Application Key: WB – Western Blot IF – Immunofluorescence IHC – Immunohistochemistry IP – Immunoprecipitation