

NMDA Receptor, NR2B Subunit Antibody
Affinity purified rabbit polyclonal antibody
Catalog # AN1056**Specification**

NMDA Receptor, NR2B Subunit Antibody - Product Information

Application	WB
Primary Accession	Q00960
Reactivity	Human, Rat
Host	Rabbit
Clonality	polyclonal
Calculated MW	180 KDa

NMDA Receptor, NR2B Subunit Antibody - Additional Information

Gene ID	24410
Gene Name	GRIN2B

Other Names

Glutamate receptor ionotropic, NMDA 2B, GluN2B, Glutamate [NMDA] receptor subunit epsilon-2, N-methyl D-aspartate receptor subtype 2B, NMDAR2B, NR2B, Grin2b

Target/Specificity

Fusion protein from the C-terminal region of the NR2B subunit.

Dilution

WB~~ 1:1000

Format

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

Antibody Specificity

Specific for the ~180k NR2B subunit of the NMDA receptor. Recognizes human, mouse and rat forms of the NR2B subunits of NMDAR. Immunolabeling is blocked by pre-adsorption of antibody with the fusion protein used to generate the antibody. No reactivity towards the NR2A and NR2C subunits.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

NMDA Receptor, NR2B Subunit Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping

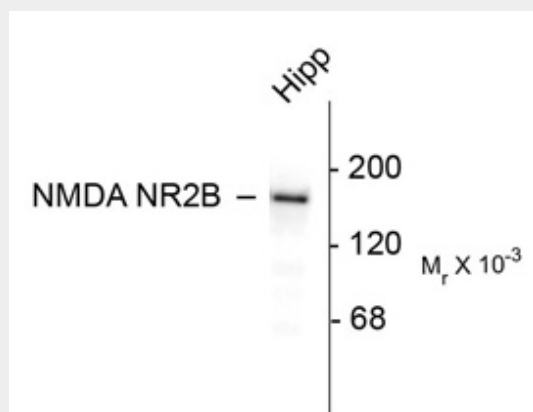
Blue Ice

NMDA Receptor, NR2B Subunit Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

NMDA Receptor, NR2B Subunit Antibody - Images



Western blot of 10 ug of rat hippocampal (Hipp) lysate showing specific immunolabeling of the ~180k NR2B subunit of the NMDA receptor.

NMDA Receptor, NR2B Subunit Antibody - Background

The ion channels activated by glutamate 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 rat NMDAR1 (NR1) was the first subunit of the NMDAR to be cloned and it 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. Overexpression of the NR2B-subunit of the NMDA receptor has been associated with increases in learning and memory while aged, memory impaired animals have deficiencies in NR2B expression (Clayton et al., 2002a; Clayton et al., 2002b). The NMDAR is also potentiated by protein phosphorylation (Lu et al., 1999).

NMDA Receptor, NR2B Subunit Antibody - References

Alvestad RM, Grosshans DR, Coultrap SJ, Nakazawa T, Yamamoto T, Browning MD (2003) Tyrosine dephosphorylation and ethanol inhibition of N-methyl-D-aspartate receptor function. *J Biol Chem* 278:11020-11025.

Carroll RC, Zukin RS (2002) NMDA-receptor trafficking and targeting: implications for synaptic transmission and plasticity. *Trends Neurosci* 25:571-577.

Clayton DA, Grosshans DR, Browning MD (2002a) Aging and surface expression of hippocampal

NMDA receptors. *J Biol Chem* 277:14367-14369.

Clayton DA, Mesches MH, Alvarez E, Bickford PC, Browning MD (2002b) A hippocampal NR2B deficit can mimic age-related changes in long-term potentiation and spatial learning in the Fischer 344 rat. *J Neurosci* 22:3628-3637.

Grosshans DR, Clayton DA, Coultrap SJ, Browning MD (2002) LTP leads to rapid surface expression of NMDA but not AMPA receptors in adult rat CA1. *Nat Neurosci* 5:27-33.

Lovinger DM, White G, Weight FF (1989) Ethanol inhibits NMDA-activated ion current in hippocampal neurons. *Science* 243:1721-1724.

Lu W-Y, Xiong Z-G, Lei S, Orser BA, Browning MD, MacDonald JF (1999) G-protein coupled receptors act via protein kinase C and Src to regulate NMDA receptors. *Nature Neurosci* 2:331-338.

Snell LD, Nunley KR, Lickteig RL, Browning MD, Tabakoff B, Hoffman PL (1996) Regional and subunit specific changes in NMDA receptor mRNA and immunoreactivity in mouse brain following chronic ethanol ingestion. *Mol Brain Res* 40:71-78.

Wentholt RJ, Prybylowski K, Standley S, Sans N, Petralia RS (2003) Trafficking of NMDA receptors. *Annu Rev Pharmacol Toxicol* 43:335-358.

Pradeep Kurup, Yongfang Zhang, Jian Xu, Deepa V. Venkitaramani, Vahram Haroutunian, Paul Greengard, Angus C. Nairn, and Paul J. Lombroso (2010) A β -Mediated NMDA Receptor Endocytosis in Alzheimer's Disease Involves Ubiquitination of the Tyrosine Phosphatase STEP61. *J. Neurosci.*, 30: 5948 - 5957.

Jian Xu, Pradeep Kurup, Yongfang Zhang, Susan M. Goebel-Goody, Peter H. Wu, Ammar H. Hawasli, Matthew L. Baum, James A. Bibb, and Paul J. Lombroso Extrasynaptic NMDA Receptors Couple Preferentially to Excitotoxicity via Calpain-Mediated Cleavage of STEP (2009) *J. Neurosci.*, 29: 9330 - 9343.

Kurtis D. Davies, Susan M. Goebel-Goody, Steven J. Coultrap, and Michael D. Browning (2008) Long Term Synaptic Depression That Is Associated with GluR1 Dephosphorylation but Not -Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Internalization *J. Biol. Chem.*, 283: 33138 - 33146.

Erin H. Norris and Sidney Strickland (2007) Modulation of NR2B-regulated contextual fear in the hippocampus by the tissue plasminogen activator system. *PNAS*, 104: 13473 - 1347.

Tatyana Chernova, Joern R. Steinert, Christopher J. Guerin, Pierluigi Nicotera, Ian D. Forsythe, and Andrew G. Smith (2007) Neurite Degeneration Induced by Heme Deficiency Mediated via Inhibition of NMDA Receptor-Dependent Extracellular Signal-Regulated Kinase 1/2 Activation *J. Neurosci.*, 27: 8475 - 8485.