

Phospho-Tyr1472 NMDA NR2B-Subunit Antibody
Affinity purified rabbit polyclonal antibody
Catalog # AN1019

Specification

Phospho-Tyr1472 NMDA NR2B-Subunit Antibody - Product Information

Application	WB
Primary Accession	Q00960
Reactivity	Rat
Predicted	Bovine, Chicken, Human, Mouse, Monkey, Zebrafish
Host	Rabbit
Clonality	polyclonal
Calculated MW	180 KDa

Phospho-Tyr1472 NMDA 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

Synthetic phospho-peptide corresponding to amino acid residues surrounding Tyr1472 conjugated to KLH.

Dilution

WB~~ 1:1000

Format

Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity

Specific for the ~180k NMDAR NR2B-subunit protein phosphorylated at Tyr1472 in Western blots. The antibody also labels proteins of ~65k and ~115k. Immunolabeling is completely blocked by blocked by either λ -Ptase or by the phosphopeptide used as the antigen but not by the corresponding dephosphopeptide.

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

Phospho-Tyr1472 NMDA NR2B-Subunit Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping

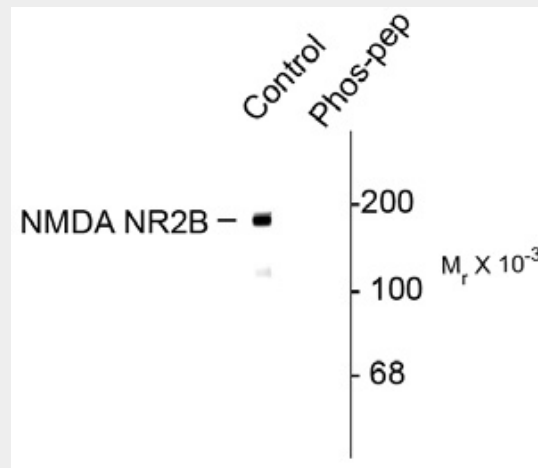
Blue Ice

Phospho-Tyr1472 NMDA 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](#)

Phospho-Tyr1472 NMDA NR2B-Subunit Antibody - Images



Western blot of rat hippocampal lysate showing specific immunolabeling of the ~180k NR2B subunit of the NMDAR phosphorylated at Tyr1472 (Control). The phosphospecificity is shown in the second lane where the immunolabeling is blocked by the phospho-peptide used as antigen (phos-pep) but not by the corresponding dephosphopeptide (not shown).

Phospho-Tyr1472 NMDA 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). Channels with physiological characteristics are produced when the NR1 subunit is combined with one or more of the NMDAR2 (NR2 A-D) subunits (Ishii et al., 1993). 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). Recent work suggests that phosphorylation of Tyr1472 on NR2B may regulate the functional expression the receptor in LTP and other forms of plasticity (Nakazawa et al., 2001; Roche et al., 2001).

Phospho-Tyr1472 NMDA 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.

Ishii T, Moriyoshi K, Sugihara H, Sakurada K, Kadotani H, Yokoi M, Akazawa C, Shigemoto R, Mizuno N, Masu M, Nakanishi S (1993) Molecular characterization of the family of the N-methyl- D-aspartate receptor subunits. *J Biol Chem* 268:2836-2843.

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

Nakazawa T, Komai S, Tezuka T, Hisatsune C, Umemori H, Semba K, Mishina M, Manabe T, Yamamoto T (2001) Characterization of Fyn-mediated tyrosine phosphorylation sites on the NR2B subunit of the N-methyl-D-aspartate receptor. *J Biol Chem* 276:693-699.

Roche KW, Standley S, McCallum J, Dune LC, Ehlers MD, Wenthold RJ (2001) Molecular determinants of NMDA receptor internalization. *Nat Neurosci* 4:794-802.

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.

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