

Product Information



NMDA Receptor NR2B Subunit (Phospho-Tyr¹⁴⁷²) Polyclonal Antibody

Item No. 10009761

Supplied as:	100 µl affinity-purified antibody in 10 mM HEPES, pH 7.5, containing 150 mM NaCl, 100 µg/ml BSA, and 50% glycerol.
Host:	Rabbit
Antigen:	Phosphopeptide corresponding to amino acid residues surrounding Phospho-Tyr ¹⁴⁷² of NMDA Receptor NR2B Subunit
Cross Reactivity:	(+) Human and rat NMDA receptor; expected to react with human, bovine, canine, chicken, mouse, non-human primates, and zebrafish NMDA receptor based on 100% homology with the amino acid sequence used as the antigen
Stability:	≥1 year at -20°C
Application:	The recommended starting dilution for western blot is 1:1,000.

The NMDA receptor (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 disease, epilepsy, and ischemic neuronal death.¹⁻³ The NMDA receptor is also one of the principal molecular targets for alcohol in the CNS.⁴⁻⁶ Channels with physiological characteristics are produced when the NR1 subunit is combined with one or more of the NMDAR2 (NR2 A-D) subunits.⁷ 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.^{8,9} Recent work suggests that phosphorylation of Tyr¹⁴⁷² on NR2B may regulate the functional expression of the receptor in LTP and other forms of plasticity.^{10,11}

References

1. Grosshans, D.R., Clayton, D.A., Coultrap, S.J., *et al.* LTP leads to rapid surface expression of NMDA but not AMPA receptors in adult rat CA1. *Nat. Neurosci.* **5**, 27-33 (2002).
2. Wenthold, R.J., Prybylowski, K., Standley, S., *et al.* Trafficking of NMDA receptors. *Annu. Rev. Pharmacol Toxicol* **43**, 335-358 (2003).
3. Carroll, R.C., Zukin, R.S., NMDA-receptor trafficking and targeting: implications for synaptic transmission and plasticity. *Trends Neurosci.* **25**, 571-577 (2002).
4. Lovinger, D.M., White, G., Weight, F.F. Ethanol inhibits NMDA-activated ion current in hippocampal neurons. *Science* **243**, 1721-1724 (1989).
5. Alvestad, R.M., Grosshans, D.R., Coultrap, S.J., *et al.* Tyrosine dephosphorylation and ethanol inhibition of N-methyl-D-aspartate receptor function. *J. Biol. Chem.* **278**, 11020-11025 (2003).
6. Snell, L.D., Nunley, K.R., Lickteig, R.L., *et al.* Regional and subunit specific changes in NMDA receptor mRNA and immunoreactivity in mouse brain following chronic ethanol ingestion. *Mol. Brain Res.* **40**, 71-78 (1996).
7. Ishii, T., Moriyoshi, K., Sugihara, H., *et al.* Molecular characterization of the family of the N-methyl-D-aspartate receptor subunits. *J. Biol. Chem.* **268**, 2836-2843 (1993).
8. Clayton, D.A., Grosshans, D.R., Browning, M.D. Aging and surface expression of hippocampal NMDA receptors. *J. Biol. Chem.* **277**, 14367-14369 (2002).
9. Clayton, D.A., Mesches, M.H., Alvarez, E., *et al.* 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 (2002).
10. Nakazawa, T., Komai, S., Tezuka, T., *et al.* Characterization of Fyn-mediated tyrosine phosphorylation sites on the NR2B subunit of the N-methyl-D-aspartate receptor. *J. Biol. Chem.* **276**, 693-699 (2001).
11. Roche, K.W., Standley, S., McCallum, J., *et al.* Molecular determinants of NMDA receptor internalization. *Nat. Neurosci.* **4**, 794-802 (2001).

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