

PRODUCT DATA SHEET

Product Name: ANTI-PHOSPHO-Tyr¹⁴⁷² NMDA RECEPTOR, NR2B SUBUNIT ANTIBODY

Product Code: P43301-100

Pack Size: 100 µL

Description: 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).

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 via sequential chromatography on phospho- and dephosphopeptide affinity columns.

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

Host Species: Rabbit (Polyclonal)

Mr (kDa): 180

Immunogen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Tyr¹⁴⁷² of NMDA NR2B. 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.

Species Reactivity: The antibody has been directly tested for reactivity in Western blots with rat tissue. It is anticipated that the antibody will react with bovine, canine, chicken, human, mouse, non-human primate and zebra fish based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

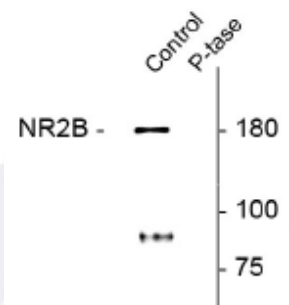
Recommended Antibody Dilutions:

WB: 1:1000

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) Clayton DA et al. (2002a) *J Biol Chem* 277:14367-14369.
- 4) Clayton DA et al. (2002b) *J Neurosci* 22:3628-3637.
- 5) Grosshans DR et al. (2002) *Nat Neurosci* 5:27-33.
- 6) Ishii T et al. (1993) *J Biol Chem* 268:2836-2843.
- 7) Lovinger DM et al. (1989) *Science* 243:1721-1724.
- 8) Nakazawa T et al. (2001) *J Biol Chem* 276:693-699.
- 9) Roche KW et al. (2001) *Nat Neurosci* 4:794-802.
- 10) Snell LD et al. (1996) *Mol Brain Res* 40:71-78.
- 11) Wenthold RJ et al. (2003) *Annu Rev Pharmacol Toxicol* 43:335-358.

Western Blot Rat hippocampal lysate showing specific immunolabeling of the ~180k NR2B subunit of NMDAR phosphorylated at Tyr¹⁴⁷² (Control). Immunolabeling is completely eliminated by treatment with λ-Phosphatase, lane 2



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

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P/N: 74119 Rev 01