Anti-Phospho-Tyr\textsuperscript{1472} NMDA Receptor NR2B Subunit

**Catalog Number:** p1516-1472  
**Size:** 100 µl

**Product Description:** Affinity purified rabbit polyclonal antibody

**Applications:** WB: 1:1000

**Antigen:** Phosphopeptide corresponding to amino acid residues surrounding the anti-phospho-Tyr\textsuperscript{1472} of NMDA Receptor NR2B. The sequence of the immunogen is identical in human, mouse and rat.

**Biological Significance:** The ion channels activated by glutamate are typically divided into two classes. Glutamate receptors that are activated by kainate and \(\alpha\)-amino-3-hydroxy-5-methyl-4-isoxalonic propionic acid (AMPA) are known as kainate/AMPA receptors (K/AMPAR). 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 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 (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 Tyr\textsuperscript{1472} on NR2B may regulate the functional expression the receptor in LTP and other forms of plasticity (Nakazawa et al., 2001; Roche et al., 2001).

**Western Blot** of 10 µg of rat brain lysate showing immunolabeling of the ~180k NR2B-subunit phosphorylated at Tyr\textsuperscript{1472} (Lane 1). The immunolabeling is blocked by the phosphopeptide used as antigen (Lanes 3 and 4) but not the corresponding dephosphopeptide (Lane 2). The antibody also labels bands at ~65k and ~115k.

**WB = Western Blot**  
**IF = Immunofluorescence**  
**IHC = Immunohistochemistry**  
**IP = Immunoprecipitation**

**Packaging:** 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

**Storage and Stability:** For long term storage –20°C is recommended. Stable at –20°C for at least 1 year.

**Shipment:** Domestic - Blue Ice; International – Blue Ice or Dry Ice.
**Purification Method:** Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

**Antibody Specificity:** Specific for the ~180k NMDA Receptor NR2B-subunit protein phosphorylated at Tyr$^{1472}$ in Western blots of rat brain extracts. The antibody also labels proteins of ~65k and ~115k. Immunolabeling is blocked by the phosphopeptide used as the antigen but not by the corresponding dephosphopeptide.

**Quality Control Tests:** Western Blots performed on each lot.

**References:**


Note: Dr. Michael Browning, an author of three of the cited papers, is President and founder of PhosphoSolutions.