Pel-Freez® BIOLOGICALS

205 North Arkansas Street
Rogers, AR 72756

PRODUCT DATA SHEET

Product Name: **ANTI-NMDA RECEPTOR, NR2B SUBUNIT N-TERMINUS ANTIBODY**

Product Code: P40023-100

Pack Size: 100 µL

Description: The ion channels activated by glutamate that are sensitive to N-methyl-Daspartate (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).

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 using a column to which the peptide immunogen was coupled.

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

Host Species: Rabbit (Polyclonal)

***Mr* (kDa):** 180

Immunogen: Peptide from the N-terminus of the NR2B subunit of rat NMDA receptor.

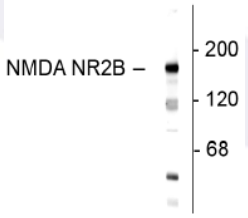
Species Reactivity: The antibody has been directly tested for reactivity in Western blots with rat tissue. It is anticipated that the antibody will also react with bovine, canine, chicken, human, mouse and non-human primate based on the fact that these species have 100 % homology with the amino acid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

Recommended Antibody Dilutions:

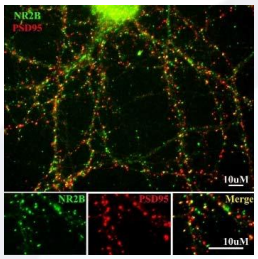
WB: 1:1000
IHC: 1:500

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) Lovinger DM et al. (1989) *Science* 243:1721-1724.
7) Lu W-Y et al. (1999) *Nature Neurosci* 2:331-338.
8) Snell LD et al. (1996) *Mol Brain Res* 40:71-78.
9) Wenthold RJ et al. (2003) *Annu Rev Pharmacol Toxicol* 43:335-358.



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



Immunostaining 14 DIV rat cortical neurons showing NR2B in green and PSD95 in red. Photo courtesy of Gang Liu.

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

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P/N: 74105 Rev 01