

## PRODUCT DATA SHEET

**Product Name:** ANTI-NMDA RECEPTOR, NR2A SUBUNIT ANTIBODY

**Product Code:** P40020-100

**Pack Size:** 100 µL

**Description:** 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-isoxalone propionic acid (AMPA) are known as kainate/AMPA receptors (K/AMPA). 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 NMDAR is also potentiated by protein phosphorylation (Lu et al., 1999). 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.

**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 fusion protein immunogen was coupled.

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

**Host Species:** Rabbit (Polyclonal)

**Mr (kDa):** 180

**Immunogen:** Fusion protein from the C-terminus of the NR2A subunit of rat NMDA receptor.

**Species Reactivity:** Recognizes human, mouse and rat forms of the NR2A subunit of NMDAR. No reactivity towards the NR2B and NR2C subunits. Immunolabeling is blocked by pre-adsorption of antibody with the fusion protein used to generate the antibody.

**Recommended Antibody Dilutions:**

**WB:** 1:1000

**IHC:** 1:1000 to 1:2000

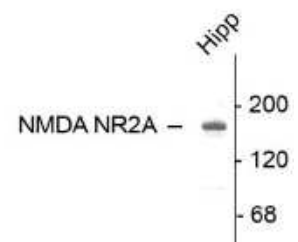
**IP:** 3 µL per 200 µg lysate

**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) Grosshans DR et al. (2002) *Nat Neurosci* 5:27-33.
- 4) Lovinger DM et al. (1989) *Science* 243:1721-1724.
- 5) Lu W-Y et al. (1999) *Nature Neurosci* 2:331-338.
- 6) Snell LD et al. (1996) *Mol Brain Res* 40:71-78.
- 7) Wenthold RJ et al. (2003) *Annu Rev Pharmacol Toxicol* 43:335-358.
- 8) Tianna R et al. (2011) *PNAS* 108:6650-6655.

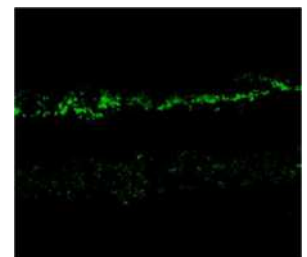
**Western Blot**

10 ug of rat hippocampal (Hipp) lysate showing specific immunolabeling of the ~180k NR2A subunit of the NMDA receptor.



**Immunostaining**

Rabbit retina showing NR2A in the rod and cone photoreceptors in the outer plexiform layer as well as the entire inner plexiform layer.



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