10320 Camino Santa Fe, Suite G
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NMDA Receptor, NR2A Subunit Antibody

Affinity purified rabbit polyclonal antibody
Catalog # AN1055

Specification

NMDA Receptor, NR2A Subunit Antibody - Product Information

Application	**IHC, WB**
Primary Accession	Q00959
Reactivity	**Human, Rat**
Host	**Rabbit**
Clonality	**polyclonal**
Calculated MW	**180 KDa**

NMDA Receptor, NR2A Subunit Antibody - Additional Information

Gene ID	**24409**
Gene Name	**GRIN2A**

Other Names
Glutamate receptor ionotropic, NMDA 2A, GluN2A, Glutamate [NMDA] receptor subunit epsilon-1, N-methyl D-aspartate receptor subtype 2A, NMDAR2A, NR2A, Grin2a

Target/Specificity
Fusion protein from the C-terminal region of the NR2A subunit.

Dilution
IHC~~ 1:1000
WB~~ 1:1000

Format
Prepared from rabbit serum by affinity purification using a column to which the fusion protein immunogen was coupled.

Antibody Specificity
Specific for the ~180k NR2A subunit of the NMDA receptor. 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.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
NMDA Receptor, NR2A Subunit Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping
Blue Ice

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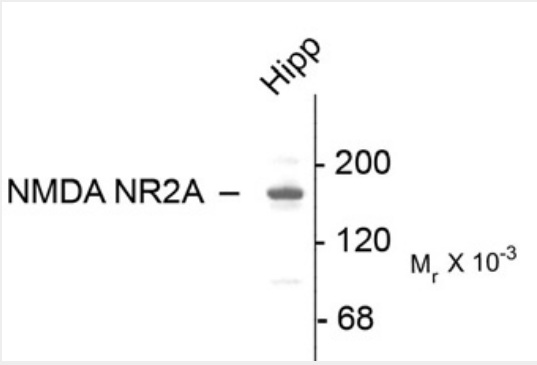
NMDA Receptor, NR2A Subunit Antibody - Protocols

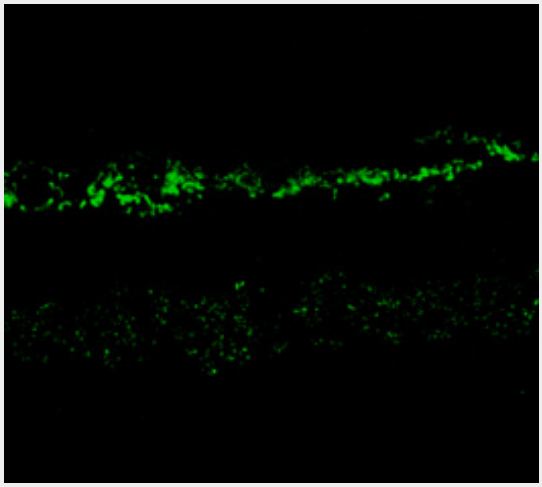
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

NMDA Receptor, NR2A Subunit Antibody - Images



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



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

NMDA Receptor, NR2A Subunit Antibody - Background

The ion channels activated by glutamate are typically divided into two classes. Glutamate receptors that are activated by kainate and α-amino-3-hydroxy-5-methyl-4-isoxalone 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 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.

NMDA Receptor, NR2A Subunit Antibody - References

Alvestad RM, Grosshans DR, Coultrap SJ, Nakazawa T, Yamamoto T, Browning MD (2003) Tyrosine dephosphorylation and ethanol inhibition of N-methyl-D-aspartate receptor function. J Biol Chem 278:11020-11025.
Carroll RC, Zukin RS (2002) NMDA-receptor trafficking and targeting: implications for synaptic transmission and plasticity. Trends Neurosci 25:571-577.
Grosshans DR, Clayton DA, Coultrap SJ, Browning MD (2002) LTP leads to rapid surface expression of NMDA but not AMPA receptors in adult rat CA1. Nat Neurosci 5:27-33.
Lovinger DM, White G, Weight FF (1989) Ethanol inhibits NMDA-activated ion current in hippocampal neurons. Science 243:1721-1724.
Lu W-Y, Xiong Z-G, Lei S, Orser BA, Browning MD, MacDonald JF (1999) G-protein coupled receptors act via protein kinase C and Src to regulate NMDA receptors. Nature Neurosci 2:331-338.
Snell LD, Nunley KR, Lickteig RL, Browning MD, Tabakoff B, Hoffman PL (1996) Regional and subunit specific changes in NMDA receptor mRNA and immunoreactivity in mouse brain following chronic ethanol ingestion. Mol Brain Res 40:71-78.
Wenthold RJ, Prybylowski K, Standley S, Sans N, Petralia RS (2003) Trafficking of NMDA receptors. Annu Rev Pharmacol Toxicol 43:335-358.