3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

ANTI-GLUTAMATE RECEPTOR NMDAR1 (NR1) (SPLICE VARIANT INSERT C2′)
Developed in Rabbit,
Affinity Isolated Antibody

Product Number **G 0416**

Product Description

Anti-Glutamate Receptor NMDAR1 (NR1) (splice variant insert C2′) is developed in rabbit using a synthetic peptide representing the sequence of the C2′ splice variant as immunogen.

Anti-Glutamate Receptor NMDAR1 (NR1) (splice variant insert C2′) recognizes the NMDA NR1 splice variant insert C2' by immunoblotting (100 kDa) and immunoprecipitation using rat and mouse brain homogenates and in HEK 293 cells, the antibody labels only those NR1 clones containing the C2′ insert.

The ion channels activated by glutamate are typically divided into two classes. Those that are sensitive to N-methyl-D-aspartate (NMDA) are designated NMDA receptors (NMDAR) while those activated by kainate and α-amino-3-hydroxy-5-methyl-4-isoxalone propionic acid (AMPA) are known as kainate/AMPA receptors (K/AMPAR). The NMDA receptor plays an essential role in the induction of LTP in the CA1 and dentate areas of the hippocampus[1] as the specific NMDA antagonist, APV blocks LTP in these areas. This receptor has also been linked to neuronal development and it has been implicated in several disorders of the central nervous system including epilepsy and ischemic neuronal cell death. The rat NMDAR1 (NR1) was the first subunit of the NMDAR to be cloned[2]. 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*.

In addition there are also a number of different splice variants of the NR1[3-5]. Differential splicing of three exons in the NR1 subunit generates up to eight NR1 splice variants and 7 of these have been identified in cDNA libraries[5]. These exons encode a 21 amino acid N-terminal domain (N1) and adjacent sequences in the C-terminus (C1 and C2). Splicing out the C2 cassette eliminates the first stop codon and produces a new reading frame that generates a new sequence of 22 amino acids (C2'). Considerable attention has been focused on the distribution and expression of these splice variants that may affect the functional properties and regulation of the NMDAR.

Reagents

Anti-Glutamate Receptor NMDAR1 (NR1) (splice variant insert C2′) is supplied lyophilized from 5 mM ammonium bicarbonate.

Preparation Instructions

Reconstitute with 0.05 ml of phosphate buffered saline.

Storage/Stability

Store lyophilized powder at 2-8°C. After reconstitution, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1:1,000 for immunoblotting and 1:200 for immunoprecipitation

Note: In order to obtain best results and assay sensitivity in different techniques and preparations, we recommend determining optimal working dilutions by titration test.

References

1. Collingridge, G.L., et al. J. Physiol. (Lond.) **335**, 33-46 (1983).
2. Moriyoshi, K., et al. Nature (Lond.) **354**, 31-37 (1991).
3. Laurie, D.J., et al. J. Neurosci. **14**, 3180-3194 (1994).
4. Foldes, R.L. et al. Gene **147**, 303-304 (1994).
5. Zukin, R.S. and Bennet, M.V.L., et al. Trends Neurosci. **18**, 306-313 (1995).

mms/lpg 3/00