

# Recombinant Rat NMDE2 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP52442

Size: 10ug, 100ug

Protein Name: Glutamate receptor ionotropic, NMDA 2B (GluN2B) (Glutamate [NMDA] receptor subunit epsilon-2) (N-methyl D-aspartate receptor subtype 2B) (NMDAR2B) (NR2B)

Synonym: Grin2b

UniProt ID: Q00960

UniProt Link: [www.uniprot.org/uniprotkb/Q00960/entry](http://www.uniprot.org/uniprotkb/Q00960/entry)

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1482 AA

Molecular Weight: 166 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MKPSAECCSPKFWLVLAFLAVSGSKARSQKSPPSIGIAVILVGTSDEVAIKDAHEKDDFHLSVVP  
ELVAMNETDPKSIITRICDLMSEDRKIQGVVFADDTDQEAIAQILDFISAQTLTPILGIHGGSSMIMADKDE  
SSMFFQFGPSIEQQASVMLNIMEEYDWYIFSIYTTTFPGYQDFVNKIRSTIENSFVGWELEEVLLLD  
SLDDGDSKIQNQLKKLQSPIILLYCTKEEATYIFEVANSVGLTGYGYTWIVPSLVAGD TDTPSEFPTG  
LISVSYDEWDYGLPARVRDGIATTAASDMLSEHSFIPEPKSSCYNTHKRIYQSNMLNRYLINVTFE  
GRNLSFSEDGYQMHPKLVIIILLNKERKWERVVGKWKDKSLQMKYYVWPRMCPETEEQEDDHL  
SIVTLEAPFVIVESVDPLSGTCMRNTVPCQKRISENKTDEEPGYIKKCKGFCIDILKKISKSVKFTYDLYLV  
TNGKHGKINGTWNMGIMGEVVMKRAYMAVGSLTINEERSEVDFSVPFITGISVMVSRNGTVSPS  
AFLEPFSADVWMMFMVLLIVSAVAVFVFEYFSPVGYNRCLADGREPGGPSFTIGKAIWLLWGLVFN  
NSVPVQNPKGTTSKIMVSVWAFFAVIFLASYTANLA AFMIQEEYVDQVSGLSDDKKFQRPND FSPF  
FGTVPNGSTERNIRNNYAEMHAYMGKFNQRGVDDALLSLKTGKLDAFIYDAVLN YMAGRDEGCKL  
VTIGSGKVFASTGYGIAIQKDSGWKRQVDLAILQLFGDGEMEELEALWLTGICHNEKNEVMSSQLDID  
NMAGVFYMLGAAMALSLITFICEHLFYWQFRHCFMGVCSGKPGMVFSISRGIYSCIHGVAIEERQSV  
MNSPTATMNNTHSNILRLLRTAKNMANLSGVNGSPQSALDFIRRESSVYDISEHRRSFTHSDCKSYN  
NPPCEENLFSYDISEVERTFGNLQLKDSNVYQDHYHHHHRPHSIGSTSSIDGLYDCDNPPFTTQPRS  
ISKKPLDIGLPSSKHSQSLDLYGKFSFKSDRYSGHDDLIRSDVSDISTHTVTYGNIEGNAAKRRKQY  
KDSLKKRPASAKSRREFDEIELAYRRRPPRSPDHKRYFRDKEGLRDFYLDQFRTKENS PHWEHVDL  
TDIYKERSDDFKRDSVSGGGPCTNRSHLKHGTGEKHGVVGGVPAPWEKNL TNVDWEDRSGGNFC



RSCPSKLNHYSSTVAGQNSGRQACIRCEACKKAGNLYDISEDNSLQELDQPAAPVAVTSNASSTKY  
PQSPTNSKAQKKNRNKLRQHSYDTFVDLQKEEAALAPRSVSLKDKGRFMDGSPYAHMFEMPAGE  
SSFANKSSVPTAGHHHNNPGSGYMLSKSLYPDRVTQNPFIPTFGDDQCLLHGSKSYFFRQPTVAGA  
SKTRPDFRALVTNKPVVVTLHGAVPGRFQKDICIGNQSNPCVPNNKNPRAFNGSSNGHVYEKLSSIE  
SDV

### 3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

### 4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

### 5. Product Description

This product is recombinant Glutamate receptor ionotropic, NMDA 2B (GluN2B) (Glutamate [NMDA] receptor subunit epsilon-2) (N-methyl D-aspartate receptor subtype 2B) (NMDAR2B) (NR2B) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

**Protein Function:** Component of N-methyl-D-aspartate (NMDA) receptors (NMDARs) that function as heterotetrameric, ligand-gated cation channels with high calcium permeability and voltage-dependent block by Mg(2+) (PubMed:11929923, PubMed:19910922, PubMed:21677647, PubMed:24607230, PubMed:24876489, PubMed:27135925, PubMed:7524561). Participates in synaptic plasticity for learning and memory formation by contributing to the long-term depression (LTD) of hippocampus membrane currents (By similarity). Channel activation requires binding of the neurotransmitter L-glutamate to the GluN2 subunit, glycine or D-serine binding to the GluN1 subunit, plus membrane depolarization to eliminate channel inhibition by Mg(2+) (PubMed:11929923, PubMed:19910922, PubMed:21677647, PubMed:24607230, PubMed:24876489, PubMed:27135925, PubMed:7524561). NMDARs mediate simultaneously the potassium efflux and the influx of calcium and sodium (By similarity). Each GluN2 subunit confers differential attributes to channel properties, including activation, deactivation and desensitization kinetics, pH sensitivity, Ca2(+) permeability, and binding to allosteric modulators (PubMed:10436042, PubMed:11929923, PubMed:24607230, PubMed:9463421). In concert with DAPK1 at extrasynaptic sites, acts as a central mediator for stroke damage (By similarity). Its phosphorylation at Ser-1303 by DAPK1 enhances synaptic NMDA receptor channel activity inducing injurious Ca2+ influx through them, resulting in an irreversible neuronal death (By similarity).

**Subcellular Localization:** Cell membrane ; Multi-pass membrane protein . Postsynaptic cell membrane ; Multi-pass membrane protein . Late endosome . Lysosome . Cytoplasm, cytoskeleton . Note=Co-localizes with the motor protein KIF17 along microtubules.

### 6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.



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- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.