Recombinant NMDE1 protein (His tag)

Catalog Number	540220
Synonyms	GluN2A; Glutamate [NMDA] receptor subunit epsilon-1; N-methyl D-aspartate receptor subtype 2A; NMDAR2A; NR2A; hNR2A
Species	Human
Expression System	E. coli
Accession	Q12879
Molecular Weight	Predictes a molecular mass of 20.58 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 21 kDa band.

Product Information

Sequence Region	647-814
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 647-814 aa (Q12879) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Glutamate receptor ionotropic, NMDA 2A (GluN2A) fragment (residues 647-814) is a high-quality, soluble protein designed for advanced neuroscience and pharmacology research. This 168-amino acid fragment, derived from the GRIN2A gene, offers a stable and functional unit ideal for structural studies, ligand binding assays, and mechanistic investigations of NMDA receptor signaling. The full-length GluN2A protein, encoded by the GRIN2A gene in Homo sapiens, is a critical component of N-methyl-D-aspartate (NMDA) receptors. These heterotetrameric, ligand-gated cation channels exhibit high calcium permeability and are voltage-dependently blocked by Mg^{2+}. NMDA receptors play a fundamental role in synaptic plasticity, contributing to the slow phase of excitatory postsynaptic currents, long-term potentiation, and learning and memory processes. Channel activation requires binding of L-glutamate to GluN2 subunits, glycine or D-serine to GluN1 subunits, and membrane depolarization to relieve Mg^{2+} inhibition. GluN2A confers specific kinetic properties to the receptor complex, including activation, deactivation, and desensitization characteristics, pH sensitivity, calcium permeability, and modulation by allosteric effectors. The protein localizes primarily to the postsynaptic cell membrane in dendritic spines, with its expression regulated by SORCS2 and the retromer complex, underscoring its importance in neuronal communication and plasticity.