

GRIN2A Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP11331c

Specification

GRIN2A Antibody (Center) - Product Information

Application Primary Accession Other Accession Reactivity Host Clonality Isotype Calculated MW Antigen Region WB, IHC-P,E <u>Q12879</u> <u>NP_001127880.1</u>, <u>NP_001127879.1</u> Mouse Rabbit Polyclonal Rabbit IgG 165283 1057-1084

GRIN2A Antibody (Center) - Additional Information

Gene ID 2903

Other Names

Glutamate receptor ionotropic, NMDA 2A, GluN2A, Glutamate [NMDA] receptor subunit epsilon-1, N-methyl D-aspartate receptor subtype 2A, NMDAR2A, NR2A, hNR2A, GRIN2A, NMDAR2A

Target/Specificity

This GRIN2A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1057-1084 amino acids from the Central region of human GRIN2A.

Dilution WB~~1:1000 IHC-P~~1:50~100

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

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

Precautions

GRIN2A Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

GRIN2A Antibody (Center) - Protein Information

Name GRIN2A (<u>HGNC:4585</u>)



Synonyms NMDAR2A

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: 20890276, PubMed: 23933818, PubMed: 23933819, PubMed:23933820, PubMed:24504326, PubMed:26875626, PubMed:26919761, PubMed:28242877, PubMed:36117210, PubMed:38538865, PubMed:8768735). NMDARs participate in synaptic plasticity for learning and memory formation by contributing to the slow phase of excitatory postsynaptic current, long-term synaptic potentiation, and learning (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: 23933818, PubMed: 23933819, PubMed:23933820, PubMed:24504326, PubMed:26875626, PubMed:26919761, PubMed:27288002. PubMed:28095420. PubMed:28105280. PubMed:28126851. PubMed:28182669, PubMed:29644724, PubMed:38307912, PubMed:8768735). NMDARs mediate simultaneously the potasium 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: 26875626, PubMed: 26919761). Participates in the synaptic plasticity regulation through activation by the L- glutamate releaseed by BEST1, into the synaptic cleft, upon F2R/PAR-1 activation in astrocyte (By similarity).

Cellular Location

Cell projection, dendritic spine {ECO:0000250|UniProtKB:Q00959}. Cell membrane; Multi-pass membrane protein. Synapse {ECO:0000250|UniProtKB:P35436} Postsynaptic cell membrane {ECO:0000250|UniProtKB:Q00959}; Multi-pass membrane protein. Cytoplasmic vesicle membrane {ECO:0000250|UniProtKB:P35436}. Note=Expression at the dendrite cell membrane and at synapses is regulated by SORCS2 and the retromer complex. {ECO:0000250|UniProtKB:P35436}

GRIN2A Antibody (Center) - Protocols

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

- <u>Western Blot</u>
- Blocking Peptides
- <u>Dot Blot</u>
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

GRIN2A Antibody (Center) - Images





GRIN2A Antibody (Center) (Cat. #AP11331c) western blot analysis in mouse heart tissue lysates (35ug/lane).This demonstrates the GRIN2A antibody detected the GRIN2A protein (arrow).



GRIN2A Antibody (Center) (Cat. #AP11331c)immunohistochemistry analysis in formalin fixed and paraffin embedded human brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of GRIN2A Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.

GRIN2A Antibody (Center) - Background

N-methyl-D-aspartate (NMDA) receptors are a class of ionotropic glutamate-gated ion channels. These receptors have been shown to be involved in long-term potentiation, an activity-dependent increase in the efficiency of synaptic transmission thought to underlie certain kinds of memory and learning. NMDA receptor channels are heteromers composed of the key receptor subunit NMDAR1 (GRIN1) and 1 or more of the 4 NMDAR2 subunits: NMDAR2A (GRIN2A), NMDAR2B (GRIN2B), NMDAR2C (GRIN2C) and NMDAR2D (GRIN2D). Alternatively spliced transcript variants encoding different isoforms have been found for this gene.

GRIN2A Antibody (Center) - References

Endele, S., et al. Nat. Genet. 42(11):1021-1026(2010) Shimada, M., et al. Hum. Genet. 128(4):433-441(2010) Saus, E., et al. J Psychiatr Res 44(14):971-978(2010) Pinheiro, A.P., et al. Am. J. Med. Genet. B Neuropsychiatr. Genet. 153B (5), 1070-1080 (2010) : King, J.E., et al. Am. J. Pathol. 176(6):2819-2830(2010)