10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GRIN2A Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11331c

Product Information

Application	WB, IHC-P, E
Primary Accession	Q12879
Other Accession	NP_001127880.1, NP_001127879.1
Reactivity	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB20664
Calculated MW	165283
Antigen Region	1057-1084

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~~1:100~500 E~~Use at an assay dependent concentration.
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.

Protein Information

Name	GRIN2A (HGNC:4585)
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}

Background

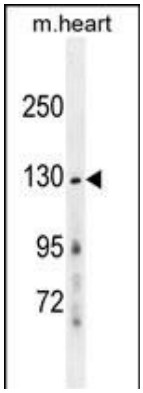
N-methyl-D-aspartate (NMDA) receptors are a class of ionotropic glutamate-gated ion channels. These receptors have been shown to be involved in long-term potentiation, an activity-dependent increase in the efficiency of synaptic transmission thought to underlie certain kinds of memory and learning. NMDA 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.

References

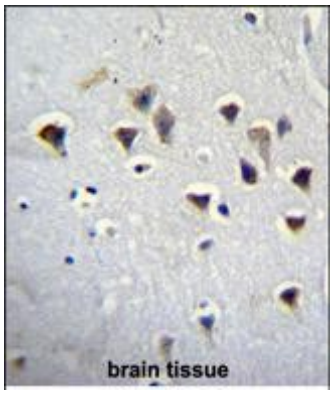
Endele, S., et al. Nat. Genet. 42(11):1021-1026(2010)
Shimada, M., et al. Hum. Genet. 128(4):433-441(2010)
Saus, E., et al. J Psychiatr Res 44(14):971-978(2010)
Pinheiro, A.P., et al. Am. J. Med. Genet. B Neuropsychiatr. Genet. 153B (5), 1070-1080 (2010) :
King, J.E., et al. Am. J. Pathol. 176(6):2819-2830(2010)

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.