

[KD]NMDAR2A Rabbit mAb

Catalog # AP76870

Product Information

Application	WB
Primary Accession	P35436
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	165421

Additional Information

Gene ID	14811
Other Names	Grin2A
Dilution	WB~~1:1000
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	Grin2a {ECO:0000312 MGI:MGI:95820}
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: 12008020 , PubMed: 1374164). 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 (PubMed: 7816096 , PubMed: 8987814). 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: 12008020 , PubMed: 1374164 , PubMed: 7790891). 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: 12008020). Participates

in the synaptic plasticity regulation through activation by the L-glutamate released by BEST1, into the synaptic cleft, upon F2R/PAR-1 activation in astrocyte (PubMed:[25645137](#)).

Cellular Location

Cell projection, dendritic spine. Cell membrane; Multi-pass membrane protein {ECO:0000250|UniProtKB:Q12879}. Synapse. Postsynaptic cell membrane {ECO:0000250|UniProtKB:Q00959}; Multi-pass membrane protein {ECO:0000250|UniProtKB:Q12879}. Cytoplasmic vesicle membrane. Note=Expression at the dendrite cell membrane and at synapses is regulated by SORCS2 and the retromer complex.

Tissue Location

Detected in striatum (PubMed:28469074). Detected in forbrain (PubMed:7816096). Detected in cerebellum (at protein level) (PubMed:8987814). Detected in brain cortex, piriform cortex, hippocampus, caudate-putamen, dentate gyrus and granule cell layer (PubMed:1374164, PubMed:7816096).

Background

Component of NMDA receptor complexes that function as heterotetrameric, ligand-gated ion channels with high calcium permeability and voltage-dependent sensitivity to magnesium. Channel activation requires binding of the neurotransmitter glutamate to the epsilon subunit, glycine binding to the zeta subunit, plus membrane depolarization to eliminate channel inhibition by Mg²⁺. Sensitivity to glutamate and channel kinetics depend on the subunit composition; channels containing GRIN1 and GRIN2A have higher sensitivity to glutamate and faster kinetics than channels formed by GRIN1 and GRIN2B . Contributes to the slow phase of excitatory postsynaptic current, long-term synaptic potentiation, and learning.

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