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Product datasheet for TA328821

Grin2a Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IF, IHC, IP, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide GHSHDVTERELRN(C), corresponding to amino acid residues 41-53 of rat NMDA Receptor 2A . Extracellular, N-terminus.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.025% NaN3.
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	glutamate ionotropic receptor NMDA type subunit 2A
Database Link:	NP_036705 Entrez Gene 2903 HumanEntrez Gene 14811 MouseEntrez Gene 24409 Rat Q00959

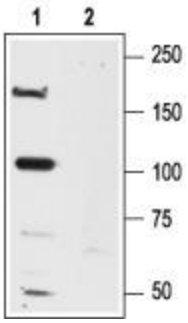
View online »

Background: The NMDA receptors are members of the glutamate receptor family of ion channels that also include the AMPA and Kainate receptors. The NMDA receptors are encoded by seven genes: one NMDAR1 (or NR1) subunit, four NR2 (NR2A-NR2D) and two NR3 (NR3A-NR3B) subunits. The functional NMDA receptor appears to be a heterotetramer composed of two NMDAR1 and two NMDAR2 subunits. Whereas the NMDAR2 subunits that assemble with the NMDAR1 subunit can be either of the same kind (i.e. two NMDAR2A subunits) or different (one NMDAR2A with one NMDAR2B). NMDAR3 subunits can substitute the NMDAR2 subunits in their complex with the NMDAR1 subunit. The NMDAR is unique among ligand-gated ion channels in that it requires the simultaneous binding of two obligatory agonists: glycine and glutamate that bind to the NMDAR1 and NMDAR2 binding sites respectively. Another unique characteristic of the NMDA receptors is their dependence on membrane potential. At resting membrane potentials the channels are blocked by extracellular Mg2+. Neuronal depolarization relieves the Mg2+ blockage and allows ion influx into the cells. NMDA receptors are strongly selective for Ca2+ influx differing from the other glutamate receptor ion channels that are non-selective cation channels. Ca2+ entry through the NMDAR regulates numerous downstream signaling pathways including long term potentiation (a molecular model of memory) and synaptic plasticity that may underlie learning. In addition, the NMDA receptors have been implicated in a variety of neurological disorders including epilepsy, ischemic brain damage, Parkinson's and Alzheimerâ??s disease. NMDA receptors expression and function are modulated by a variety of factors including receptor trafficking to the synapses and internalization as well as phosphorylation and interaction with other intracellular proteins.

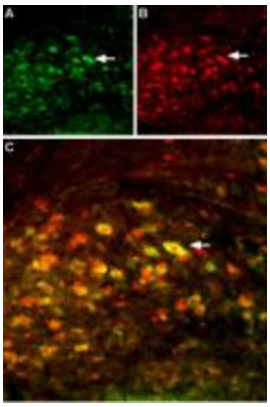
Synonyms: hNR2A; NMDAR2A; NR2A; OTTHUMP00000160135; OTTHUMP00000174531

Note: This antibody was tested in live cell imaging. Please see IF/ICC data for detail.

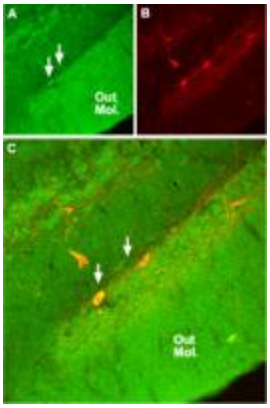
Product images:



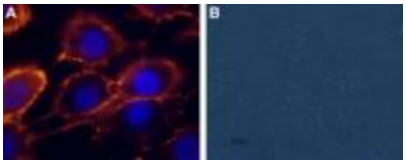
Western blot analysis of rat brain lysates: 1. Anti-NMDA Receptor 2A (GluN2A) (extracellular) antibody, (1:600). 2. Anti-NMDA Receptor 2A (GluN2A) (extracellular) antibody, preincubated with the control peptide antigen.



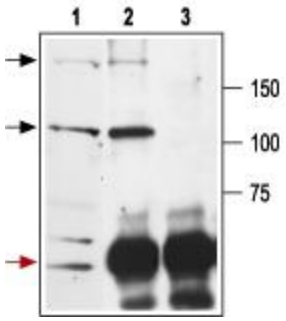
IHC staining of mouse brain sections using Anti-GluN2B (extracellular) antibody, (1:60) and Anti-GluN2A (extracellular) antibody, (1:200). A. Sections were incubated with Anti-GluN2A (extracellular) antibody, followed by goat anti-rabbit-Alexa-488 (green). B. The same sections were incubated with Anti-GluN2B (extracellular) antibody (red). C. Merge of A and B demonstrates the ubiquitous colocalization of the GluN2A and GluN2B subunits in cells with neuronal profiles in this nucleus.



IHC staining of rat hippocampal dentate gyrus with Anti-NMDA Receptor 2A (GluN2A) (extracellular) antibody. A. NMDA Receptor 2A (green) appears diffusely in the outer molecular layer of the dentate gyrus (Out Mol.) and in cells along the subgranular layer (arrows). B. Staining of parvalbumin (PV, red) identifies interneurons in the dentate gyrus. C. Confocal merge demonstrates localization of PV in some neurons with NMDA Receptor 2A.



Expression of NMDA Receptor 2A in rat C6 glioma cells. Immunocytochemical staining of live intact rat C6 glioma cells. A. Cells were stained with Anti-NMDA Receptor 2A (GluN2A) (extracellular) antibody, (1:100), followed by goat anti-rabbit-AlexaFluor-555 secondary antibody (red). Cell nuclei were stained with the cell permeable dye Hoechst 33342 (blue staining). B. Live view of the same field.



Immunoprecipitation of rat brain lysates. 1. Cell lysate. 2. Cell lysates + protein A beads + Anti-NMDA Receptor 2A (GluN2A) (extracellular) antibody. 3. Cell lysates + protein A beads + pre-immune rabbit serum. Black arrow indicates the NMDA Receptor 2A protein while the red arrow shows the IgG heavy chain. Immunoblot was performed with Anti-NMDA Receptor 2A (GluN2A) (extracellular) antibody.