Store at -20°C

#14544

NMDA Receptor2B (GluN2B) (D8E10) Rabbit mAb

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Entrez-Gene ID #2904
UniProt ID #Q13224

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP Endogenous	M, R, (H)	190 kDa	Rabbit IgG**

Background: N-methyl-D-aspartate receptor (NMDAR) forms a heterodimer of at least one NR1 and one NR2A-D subunit. Multiple receptor isoforms with distinct brain distributions and functional properties arise by selective splicing of the NR1 transcripts and differential expression of the NR2 subunits. NR1 subunits bind the co-agonist glycine and NR2 subunits bind the neurotransmitter glutamate. Activation of the NMDA receptor or opening of the ion channel allows flow of Na^+ and Ca^{2+} ions into the cell, and K^+ out of the cell (1). Each subunit has a cytoplasmic domain that can be directly modified by the protein kinase/phosphatase (2). PKC can phosphorylate the NR1 subunit (NMDAR1) of the receptor at Ser890/Ser896, and PKA can phosphorylate NR1 at Ser897 (3). The phosphorylation of NR1 by PKC decreases its affinity for calmodulin, thus preventing the inhibitory effect of calmodulin on NMDAR (4). The phosphorylation of NR1 by PKA probably counteracts the inhibitory effect of calcineurin on the receptor (5). NMDAR mediates long-term potentiation and slow postsynaptic excitation, which play central roles in learning, neurodevelopment, and neuroplasticity (6).

EphrinB2 binding to the receptor EphB leads to the activation of Src family tyrosine kinases, which phosphorylate NMDAR2B at Tyr1252, Tyr1336 and Tyr1472. In turn, phosphorylated NMDAR2B enhances the ability of the functional NMDA receptor to regulate Ca^{2+} influx in response to glutamate (7).

Specificity/Sensitivity: NMDA Receptor2B (GluN2B) (D8E10) Rabbit mAb recognizes endogenous levels of total NMDAR2B protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp1253 of human GluN2B protein.

Background References:

(1) Liu, X.B. et al. (2004) *J Neurosci* 24, 8885-95.

(2) Westphal, R.S. et al. (1999) *Science* 285, 93-6.

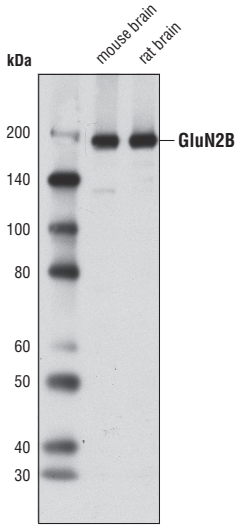
(3) Tingley, W.G. et al. (1997) *J Biol Chem* 272, 5157-66.

(4) Hisatsune, C. et al. (1997) *J Biol Chem* 272, 20805-10.

(5) Raman, I.M. et al. (1996) *Neuron* 16, 415-21.

(6) Makhinson, M. et al. (1999) *J Neurosci* 19, 2500-10.

(7) Takasu, M.A. et al. (2002) *Science* 295, 491-5.



Western blot analysis of extracts from mouse and rat brain using NMDA Receptor2B (GluN2B) (D8E10) Rabbit mAb.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. *Store at –20°C. Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.