

#3381 Store at -20°C

Phospho-NMDAR1 (Ser890) Antibody

100 µl
 (10 western blots)

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #2902
Swiss-Prot Acc. #Q05586

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-F Transfected	H, M, R	120 kDa	Rabbit**

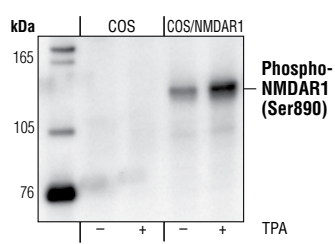
Background: N-methyl-D-aspartate receptor (NMDAR) forms a heterodimer of at least one NR1 and one NR2A-D subunit. Multiple receptor isoforms with distinct brain distributions and functional properties arise by selective splicing of the NR1 transcripts and differential expression of the NR2 subunits. 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 Ca²⁺ 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 on Ser890/Ser896, and PKA can phosphorylate NR1 on 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).

Specificity/Sensitivity: Phospho-NMDAR1 (Ser890) Antibody detects transfected NMDAR1 only when phosphorylated at serine 890.

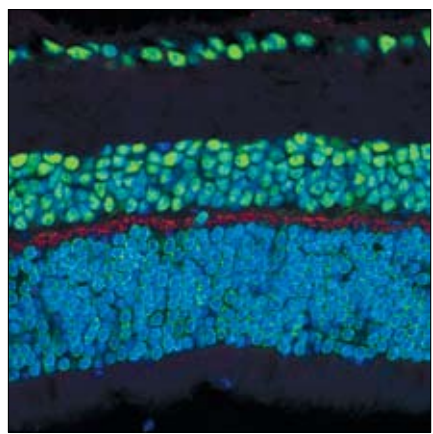
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding serine 890 of human NMDAR1. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

- (1) Liu, X.B. et al. (2004) *J. Neurosci.* 24, 8885–8895.
- (2) Westphal, R.S. et al. (1999) *Science* 285, 93–96.
- (3) Tingley, W.G. et al. (1997) *J. Biol. Chem.* 272, 5157–5166.
- (4) Hisatsune, C. et al. (1997) *J. Biol. Chem.* 272, 20805–20810.
- (5) Raman, I.M. et al. (1996) *Neuron* 16, 415–421.
- (6) Makhinson, M. et al. (1999) *J. Neurosci.* 19, 2500–2510.



Western blot analysis of extracts from parental (COS) or NMDAR1-transfected (COS/NMDAR1) cells, untreated or TPA-treated (100 nM for 5 minutes), using Phospho-NMDAR1 (Ser890) Antibody.



Confocal microscopic image of mouse retina labeled with Phospho-NMDAR1 (Ser890) Antibody (red) and CREB (86B10) Mouse mAb #9104 (green). Blue pseudocolor stain = DRAQ5® #4084 (fluorescent DNA dye).

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

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

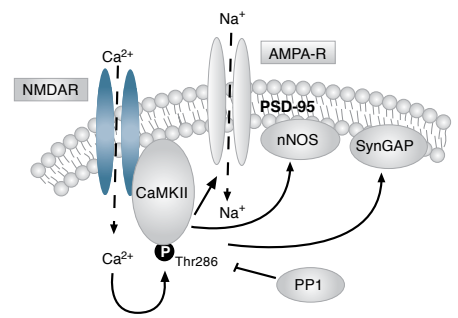
****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunofluorescence (IF-F)	1:100

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.



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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.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: 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.