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Product Datasheet

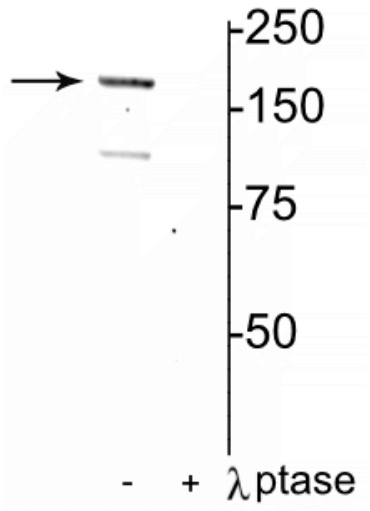
Anti-NMDA NR2A Subunit (Tyr1325)

Pooled Serum

Overview

Catalog #	p1514-1325
Host Species	Rabbit Polyclonal
Format	Antigen Affinity Purified from Pooled Serum
Applications	WB 1:1000
Species Tested	Human, Mouse, Rat
Expected Reactivity	Bovine, Canine, Hamster, Sheep
Immunogen	Synthetic phospho-peptide corresponding to amino acid residues surrounding Tyr1325 of the rat NMDA receptor, conjugated to keyhole limpet hemocyanin (KLH).
Molecular Weight	180 kDa
Cite this Antibody	PhosphoSolutions Cat# p1514-1325, RRID: AB_2492174

Images



Western blot of rat hippocampal lysate showing specific immunolabeling of the ~180 kDa NR2A subunit of the NMDAR phosphorylated at Tyr^{1325} in the first lane (-). Phosphospecificity is shown in the second lane (+) where immunolabeling is completely eliminated by lysate treatment with lambda phosphatase (400 units/100 uL lysate for 30 min).

Details

Target Description	The ion channels activated by glutamate that are sensitive to N-methyl-D-aspartate (NMDA) are designated NMDA receptors (NMDAR). The NMDAR plays an essential role in memory, neuronal development and it has also been implicated in several disorders of the central nervous system including Alzheimer's, epilepsy and ischemic neuronal cell death (Grosshans *et al.*, 2002; Wenthold *et al.*, 2003; Carroll and Zukin, 2002). The NMDA receptor is also one of the principal molecular targets for alcohol in the CNS (Lovinger *et al.*, 1989; Alvestad *et al.*, 2003; Snell *et al.*, 1996). Channels with physiological characteristics are produced when the NR1 subunit is combined with one or more of the NMDAR2 (NR2 A-D) subunits (Ishii *et al.*, 1993). Recently, phosphorylation of Tyrosine 1325 of the NR2A subunit has been shown to be increased in human brain tissue sections from HIV-infected individuals with encephalitis (King *et al.*, 2010). In addition, Tyr-1325 phosphorylation has been linked with depression-related behavior (Taniguchi *et al.*, 2009).
Specificity	Specific for endogenous levels of the ~180k NMDAR NR2A-subunit protein phosphorylated at Tyr1325 in Western blots. Immunolabeling is completely eliminated by treatment with λ-phosphatase.
Production/Purification	Prepared from pooled rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.
Quality Control	Western blots performed on each lot.
Buffer	10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol.
Storage	Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol.
Stability	After date of receipt, stable for at least 1 year at -20°C.

Significant Citations

Shi, X., Zhang, Q., Li, J., Liu, X., Zhang, Y., Huang, M., Fang, W., Xu, J., Yuan, T., Xiao, L. and Tang, Y.Q., 2021. Disrupting phosphorylation of Tyr-1070 at GluN2B selectively produces resilience to depression-like behaviors. *Cell Reports*, *36(8)*, p.109612.

Zhang, L., Qin, Z., Sharmin, F., Lin, W., Ricke, K.M., Zasloff, M., Stewart, A.F. and Chen, H.H., 2021. Tyrosine phosphatase PTP1B impairs presynaptic NMDA receptor-mediated plasticity in a mouse model of Alzheimer's disease. *Neurobiology of Disease*, p.105402.

Avchalumov, Y., Oliver, R.J., Trenet, W., Osorno, R.E.H., Sibley, B.D., Purohit, D.C., Contet, C., Roberto, M., Woodward, J.J. and Mandyam, C.D., 2020. Chronic ethanol exposure differentially alters neuronal function in the medial prefrontal cortex and dentate gyrus. *Neuropharmacology*, *185*, p.108438.

Takashima, Y., Fannon, M.J., Galinato, M.H., Steiner, N.L., An, M., Zemljic-Harpf, A.E., Somkuwar, S.S., Head, B.P. and Mandyam, C.D., 2018. Neuroadaptations in the dentate gyrus following contextual cued reinstatement of methamphetamine seeking. *Brain Structure and Function*, pp.1-15.

Staples, M. C., Somkuwar, S. S., & Mandyam, C. D. (2015). Developmental effects of wheel running on hippocampal glutamate receptor expression in young and mature adult rats. *Neuroscience*, *305*, pp.248-256.

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