

Anti-Metabotropic Glutamate Receptor 5/1a Antibody



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Catalog #: 2032-mGluR5/1a

Size: 100 µl

Cite this antibody: PhosphoSolutions Cat# 2032-mGluR5/1, RRID:AB_2492152

Host	Applications	Species Tested	Species Reactivity*	Molecular Reference
Rabbit	WB 1:1000 IHC 1:500 (frozen sections)	M, R	H	~125 kDa & ~250 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: The metabotropic glutamate receptors (mGluRs) are key receptors in the modulation of excitatory synaptic transmission in the central nervous system. They are implicated in many forms of neural plasticity as well as learning and memory and drug abuse (Bhattacharya et al., 2004; Francesconi et al., 2004; Wilson and Nicoll, 2001). Group I metabotropic glutamate receptors (consisting of mGluR1 and mGluR5) are G-protein-coupled neurotransmitter receptors that are localized in the perisynaptic region of the postsynaptic membrane. When activated, Group I mGluRs lead to stimulation of phospholipase and activation of Protein Kinase C. In contrast, activation of Group II metabotropic receptors (mGluR2 and mGluR3) leads to inhibition of adenylate cyclase. The mGluR1 receptor may also be critically involved in limiting the deleterious effects of excitotoxicity (Blaabjerg et al., 2003). In contrast, the mGluR5 receptor appears to be essential for late phase LTP in area CA1 of the hippocampus (Francesconi et al., 2004).

Antigen: Peptide from the C-terminal region of rat mGluR5 and rat mGluR1a.

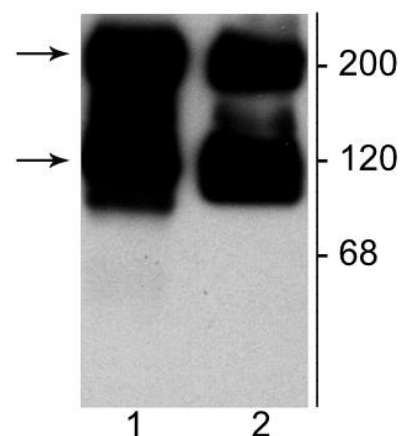
Antibody Specificity: Specific for endogenous levels of the ~125 kDa monomer and the ~250 kDa dimers of mGluR5 and mGluR1. Immunolabeling blocked by preadsorption of antibody with the peptide used to generate the antibody.

Purification Method: Prepared from pooled rabbit serum using a column to which the peptide immunogen was coupled.

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of 10 µg of HEK 293 cells expressing: 1) mGluR5 and 2) mGluR1a showing the specific immunolabeling of the ~125 kDa monomer and the ~250 kDa dimers of both mGluR1a (2) and mGluR5 (1).

Product Specific References:

Bellini, S., Fleming, K.E., De, M., McCauley, J.P., Petroccione, M.A., D'Brant, L.Y., Tkachenko, A., Kwon, S., Jones, L.A. and Scimemi, A., 2018. Neuronal glutamate transporters control dopaminergic signaling and compulsive behaviors. *J Neurosci.*, 38(4), pp.937-961.

General References:

Bhattacharya M, Babwah AV, Godin C, Anborgh PH, Dale LB, Poulter MO, Ferguson SSG (2004) Ral and phospholipase D2-dependent pathway for constitutive metabotropic glutamate receptor endocytosis. *J Neurosci* 24:8752-8761.

Blaabjerg M, Fang LW, Zimmer J, Baskys A (2003) Neuroprotection against NMDA excitotoxicity by group I metabotropic glutamate receptors is associated with reduction of NMDA stimulated currents. *Exp Neurol* 183:573-580.

Francesconi W, Cammalleri M, Sanna PP (2004) The metabotropic glutamate receptor 5 is necessary for late-phase long-term potentiation in the hippocampal CA1 region. *Brain Res* 1022:12-18.

Wilson RI, Nicoll RA (2001) Endogenous cannabinoids mediate retrograde signalling at hippocampal synapses. *Nature (London)* 410:588-592.