PRODUCT INFORMATION

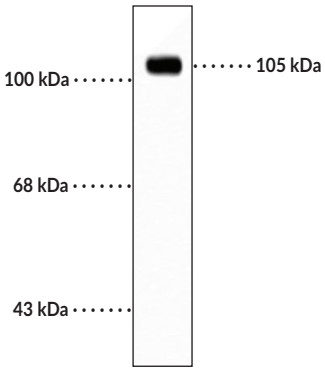
GluR1 Monoclonal Antibody (Clone RH95)

Item No. 29277

Overview and Properties

Contents:	This vial contains 100 µl of protein G-purified mouse monoclonal antibody.
Synonyms:	AMPA 1, GluA1, Glutamate Receptor 1, GRIA1
Immunogen:	Peptide corresponding to amino acid residues from the N-terminal region of rat GluR1
Molecular Weight:	~105 kDa
Species Reactivity:	(+) Mouse, rat
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 µg/ml BSA, and 50% glycerol
Clone:	RH95
Host:	Mouse
Isotype:	IgG2a
Applications:	Western blot (WB); the recommended starting dilution is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



WB of rat hippocampal lysate showing specific immunolabeling of the ~105 kDa GluR1 protein.

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Description

AMPA receptors are ionotropic glutamate receptors that mediate excitatory synaptic transmission.[1,2] They are tetrameric protein complexes expressed throughout the central nervous system in both neurons and glia that are assembled from combinations of GluR1, GluR2, GluR3, and GluR4, also known as GluR-A-D, subunits, each of which has extracellular N-terminal and ligand binding domains, a channel domain consisting of three membrane-spanning helices and a channel pore loop, and an intracellular C-terminus.[2-5] The GluR1 subunit, which is encoded by *GRIA1* in humans, is primarily expressed in the forebrain and hippocampus. Mice lacking the GluR1 subunit exhibit normal spatial reference memory but have deficits in spatial working memory.[1] They also exhibit increased and decreased duration of nocifensive behaviors in phases I and II, respectively, of the formalin test, as well as increased duration of nocifensive behaviors in response to intraplantar injection of capsaicin (Item No. 92350), compared with wild-type mice.[6] SNPs in *GRIA1* have been found in patients with bipolar disorder with psychotic features.[4] Elevated levels of *GRIA1* mRNA have been found in postmortem dorsolateral prefrontal cortex from patients with schizophrenia.[7] Cayman's GluR1 Monoclonal Antibody (Clone RH95) can be used for Western blot (WB) applications. The antibody recognizes GluR1 at approximately 105 kDa from mouse and rat samples.

References

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2. Isaac, J.T.R., Ashby, M.C., and McBain, C.J. The role of the GluR2 subunit in AMPA receptor function and synaptic plasticity. *Neuron* **54(6)**, 859-871 (2007).
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4. Kerner, B., Jasinska, A.J., DeYoung, J., *et al.* Polymorphisms in the GRIA1 gene region in psychotic bipolar disorder. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* **150B(1)**, 24-32 (2009).
5. Sprengel, R. Role of AMPA receptors in synaptic plasticity. *Cell Tissue Res.* **326(2)**, 447-455 (2006).
6. Hartmann, B., Ahmadi, S., Heppenstall, P.A., *et al.* The AMPA receptor subunits GluR-A and GluR-B reciprocally modulate spinal synaptic plasticity and inflammatory pain. *Neuron* **44(4)**, 637-650 (2004).
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