SY SY Synaptic Systems

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GluA1

Cat.No. 182-01P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 μg peptide, lyophilized. For reconstitution add 100 μl H₂O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. Control peptides should also be stored at -20°C when still lyophilized!
Immunogen	Synthetic peptide corresponding to AA 895 to 907 from rat GluA1 (UniProt Id: P19490)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	182 011
Remarks	This control peptide consists of the synthetic peptide (aa 895 - 907 in rat GluA 1) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Ionotropic **glu**tamate **r**eceptors (**iGluR**s) mediate rapid excitatory neurotransmission in the mammalian CNS. They can be subdivided into three major groups, the **AMPA/GluA**, NMDA/GluN and kainate/GluK receptors (KARs). mRNAs coding for glutamate receptors are substrates for an adenosine deaminase acting on RNA (ADAR) that increases the diversity of these proteins. Glutamate receptors of the AMPA subtype are monovalent cation channels and are composed of the four AMPA subunits **GluA 1**, GluA 2, GluA 3, and GluA 4.

Selected General References

A nomenclature for ligand-gated ion channels. Collingridge GL, Olsen RW, Peters J, Spedding M Neuropharmacology (2009) 56(1): 2-5.

Differential regulation of dendrite complexity by AMPA receptor subunits GluR1 and GluR2 in motor neurons. Prithviraj R, Kelly KM, Espinoza-Lewis R, Hexom T, Clark AB, Inglis FM Developmental neurobiology (2008) 68(2): 247-64.

Influence of environmental enrichment on steady-state mRNA levels for EAAC1, AMPA1 and NMDA2A receptor subunits in rat hippocampus.

Andin J, Hallbeck M, Mohammed AH, Marcusson J Brain research (2007) 1174: 18-27.

Identification and characterization of a novel phosphorylation site on the GluR1 subunit of AMPA receptors. Lee HK, Takamiya K, Kameyama K, He K, Yu S, Rossetti L, Wilen D, Huganir RL Molecular and cellular neurosciences (2007) 36(1): 86-94.

Receptor occupancy and channel-opening kinetics: a study of GLUR1 L497Y AMPA receptor. Pei W, Ritz M, McCarthy M, Huang Z, Niu L The Journal of biological chemistry (2007) 282(31): 22731-6.

Differential localization of the GluR1 and GluR2 subunits of the AMPA-type glutamate receptor among striatal neuron types in rats.

Deng YP, Xie JP, Wang HB, Lei WL, Chen Q, Reiner A Journal of chemical neuroanatomy (2007) 33(4): 167-92.

Widespread expression of the AMPA receptor GluR2 subunit at glutamatergic synapses in the rat spinal cord and phosphorylation of GluR1 in response to noxious stimulation revealed with an antigen-unmasking method. Nagy GG, Al-Ayyan M, Andrew D, Fukaya M, Watanabe M, Todd AJ The Journal of neuroscience : the official journal of the Society for Neuroscience (2004) 24(25): 5766-77.

Phosphorylation of the AMPA receptor GluR1 subunit is required for synaptic plasticity and retention of spatial memory. Lee HK, Takamiya K, Han JS, Man H, Kim CH, Rumbaugh G, Yu S, Ding L, He C, Petralia RS, Wenthold RJ, et al. Cell (2003) 112(5): 631-43.

NMDA induces long-term synaptic depression and dephosphorylation of the GluR1 subunit of AMPA receptors in hippocampus. Lee HK, Kameyama K, Huganir RL, Bear MF Neuron (1998) 21(5): 1151-62.

Differential expression of glutamate receptor genes (GluR1-5) in the rat retina. Hughes TE, Hermans-Borgmeyer I, Heinemann S Visual neuroscience (1992) 8(1): 49-55.

The characterization and localization of the glutamate receptor subunit GluR1 in the rat brain. Rogers SW, Hughes TE, Hollmann M, Gasic GP, Deneris ES, Heinemann S The Journal of neuroscience : the official journal of the Society for Neuroscience (1991) 11(9): 2713-24.