

## GluA

Cat.No. 182 411C3; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, fluorescence-labeled with Oyster <sup>®</sup> 550. Rabbit serum albumin was added for stabilization. For reconstitution add 100 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Either add 1:1 (v/v) glycerol, then aliquot and store at -20°C until use, or store aliquots at -80°C without additives. Reconstitute immediately upon receipt! Avoid bright light when working with the antibody to minimize photo bleaching of the fluorescent dye. The mounting agent Aquatex <sup>®</sup> (Merck Chemicals) is not compatible with Oyster dyes!
Applications	<b>WB:</b> not recommended <b>IP:</b> not tested yet <b>ICC:</b> 1 : 100 up to 1 : 500 (see remarks) <b>IHC:</b> not tested yet <b>IHC-P/FFPE:</b> not tested yet
Label	Oyster 550
Clone	248B7
Subtype	IgG2a (κ light chain)
Immunogen	Nativ Protein corresponding to AA 22 to 545 from rat GluA2 (UniProt Id: P19491)
Epitop	Epitop: AA 22 to 545 from rat GluA2 (UniProt Id: P19491)
Reactivity	Reacts with: rat (P19490, P19491, P19492, P19493), mouse (P23818, P23819, Q9Z2W9, Q9Z2W8). Other species not tested yet.
Specificity	Raised against GluA 2 but detects GluA 1, 2, and 3 transfected cells. Due to sequence homology, it likely crossreacts also to GluA 4.
Remarks	<b>ICC:</b> This antibody is suitable for the surface staining of living cells. After washing cells with bound antibodies they can be fixed and visualized with secondary reagents.

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

Ionotropic **glutamate receptors (iGluRs)** 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 References SYSY Antibodies

Aberrant neuronal activity-induced signaling and gene expression in a mouse model of RASopathy. Altmüller F, Pothula S, Annamneedi A, Nakhaei-Rad S, Montenegro-Venegas C, Pina-Fernández E, Marini C, Santos M, Schanze D, Montag D, Ahmadian MR, et al. PLoS genetics (2017) 13(3): e1006684. **ICC; tested species: mouse**

Riluzole attenuates the efficacy of glutamatergic transmission by interfering with the size of the readily releasable neurotransmitter pool.

Lazarevic V, Yang Y, Ivanova D, Fejtova A, Svenningsson P. Neuropharmacology (2018) : . **ICC; tested species: rat**

### 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.

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.

Interactions between NEEP21, GRIP1 and GluR2 regulate sorting and recycling of the glutamate receptor subunit GluR2. Steiner P, Alberi S, Kulangara K, Yersin A, Sarria JC, Regulier E, Kasas S, Dietler G, Muller D, Catsicas S, Hirling H, et al. The EMBO journal (2005) 24(16): 2873-84.

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.

Induction of dendritic spines by an extracellular domain of AMPA receptor subunit GluR2. Passafaro M, Nakagawa T, Sala C, Sheng M. Nature (2003) 424(6949): 677-81.

The influence of glutamate receptor 2 expression on excitotoxicity in GluR2 null mutant mice. Iihara K, Joo DT, Henderson J, Sattler R, Taverna FA, Lourensen S, Orser BA, Roder JC, Tymianski M. The Journal of neuroscience : the official journal of the Society for Neuroscience (2001) 21(7): 2224-39.

PDZ proteins interacting with C-terminal GluR2/3 are involved in a PKC-dependent regulation of AMPA receptors at hippocampal synapses. Daw MI, Chittajallu R, Bortolotto ZA, Dev KK, Duprat F, Henley JM, Collingridge GL, Isaac JT. Neuron (2000) 28(3): 873-86.

The AMPA receptor GluR2 C terminus can mediate a reversible, ATP-dependent interaction with NSF and alpha- and beta-SNAPs. Osten P, Srivastava S, Inman GJ, Vilim FS, Khatri L, Lee LM, States BA, Einheber S, Milner TA, Hanson PI, Ziff EB, et al. Neuron (1998) 21(1): 99-110.

Synaptic distribution of GluR2 in hippocampal GABAergic interneurons and pyramidal cells: a double-label immunogold analysis. He Y, Janssen WG, Vissavajhala P, Morrison JH. Experimental neurology (1998) 150(1): 1-13.

RNA editing of the glutamate receptor subunits GluR2 and GluR6 in human brain tissue. Paschen W, Hedreen JC, Ross CA. Journal of neurochemistry (1994) 63(5): 1596-602.

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.