

## GluA1

Cat.No. 182 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

|                         |   |
|-------------------------|---|
| Reconstitution/ Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. |
| Applications            | <b>WB:</b> 1 : 1000 (AP staining)<br><b>IP:</b> yes<br><b>ICC:</b> 1 : 500 (see remarks)<br><b>IHC:</b> not tested yet<br><b>IHC-P/FFPE:</b> not tested yet   |
| Immunogen               | Recombinant protein corresponding to AA 828 to 906 from mouse GluA1 (UniProt Id: P23818)  |
| Reactivity              | Reacts with: human (P42261), rat (P19490), mouse (P23818).<br>No signal: zebrafish.<br>Other species not tested yet.  |
| Specificity             | Specific for GluA 1. (K.O. verified)  |
| matching control        | 182-0P  |
| Remarks                 | <b>ICC:</b> Only methanol fixation, recommended protocol.   |

### 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

- Synaptotagmin-3 drives AMPA receptor endocytosis, depression of synapse strength, and forgetting. Awasthi A, Ramachandran B, Ahmed S, Benito E, Shinoda Y, Nitzan N, Heukamp A, Rannio S, Martens H, Barth J, Burk K, et al. *Science (New York, N.Y.)* (2018) : . **WB, ICC; tested species: rat**
- High-resolution proteomics unravel architecture and molecular diversity of native AMPA receptor complexes. Schwenk J, Harmel N, Brechet A, Zolles G, Berkefeld H, Müller CS, Bildl W, Baehrens D, Hüber B, Kulik A, Klöcker N, et al. *Neuron* (2012) 74(4): 621-33. **IP; tested species: rat**
- Kibra Modulates Learning and Memory via Binding to Dendrin. Ji Z, Li H, Yang Z, Huang X, Ke X, Ma S, Lin Z, Lu Y, Zhang M. *Cell reports* (2019) 26(8): 2064-2077.e7. **ICC; tested species: mouse**
- Chronic Toxoplasma infection is associated with distinct alterations in the synaptic protein composition. Lang D, Schott BH, van Ham M, Morton L, Kulikovskaja L, Herrera-Molina R, Pielot R, Klawonn F, Montag D, Jänsch L, Gundelfinger ED, et al. *Journal of neuroinflammation* (2018) 15(1): 216. **WB; tested species: mouse**
- Treatment of intermittent hypoxia increases phosphorylated tau in the hippocampus via biological processes common to aging. Yagishita S, Suzuki S, Yoshikawa K, Iida K, Hirata A, Suzuki M, Takashima A, Maruyama K, Hirasawa A, Awaji T. *Molecular brain* (2017) 10(1): 2. **WB**
- How to Make an Active Zone: Unexpected Universal Functional Redundancy between RIMs and RIM-BPs. Acuna C, Liu X, Südhof TC. *Neuron* (2016) 91(4): 792-807. **WB**
- The intellectual disability protein RAB39B selectively regulates GluA2 trafficking to determine synaptic AMPAR composition. Mignogna ML, Giannandrea M, Gurgone A, Fanelli F, Raimondi F, Mapelli L, Bassani S, Fang H, Van Anken E, Alessio M, Passafaro M, et al. *Nature communications* (2015) 6: 6504. **WB; tested species: mouse**
- Deletion of olfactomedin 2 induces changes in the AMPA receptor complex and impairs visual, olfactory, and motor functions in mice. Sultana A, Nakaya N, Dong L, Abu-Asab M, Qian H, Tomarev SI. *Experimental neurology* (2014) 261: 802-11. **WB**
- Autistic-like behaviours and hyperactivity in mice lacking ProSAP1/Shank2. Schmeisser MJ, Ey E, Wegener S, Bockmann J, Stempel AV, Kuebler A, Janssen AL, Udvardi PT, Shibani E, Spilker C, Balschun D, et al. *Nature* (2012) 486(7402): 256-60. **WB**
- IKB kinase/nuclear factor κB-dependent insulin-like growth factor 2 (Igf2) expression regulates synapse formation and spine maturation via Igf2 receptor signaling. Schmeisser MJ, Baumann B, Johannsen S, Vindedal GF, Jensen V, Hvalby ØC, Sprengel R, Seither J, Maqbool A, Magnutzki A, Lattke M, et al. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2012) 32(16): 5688-703. **WB; tested species: mouse**
- The anaphase promoting complex is required for memory function in mice. Kuczera T, Stilling RM, Hsia HE, Bahari-Javan S, Irniger S, Nasmyth K, Sananbenesi F, Fischer A. *Learning & memory (Cold Spring Harbor, N.Y.)* (2011) 18(1): 49-57. **WB**

### Selected General References

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- 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.