Synaptic Systems

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GluN 1

Cat.No. 114 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For reconstitution add 100 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	**WB**: 1 : 1000 up to 1 : 10000 (AP staining) **IP**: yes (see remarks) **ICC**: 1 : 1000 (see remarks) **IHC**: not tested yet **IHC-P/FFPE**: not tested yet **ELISA**: yes (see remarks)
Clone	M68
Subtype	IgG2b (κ light chain)
Immunogen	Recombinant protein corresponding to AA 660 to 811 from rat GluN1 (UniProt Id: P35439)
Epitop	Epitop: AA 660 to 811 from rat GluN1 (UniProt Id: P35439)
Reactivity	Reacts with: human (Q05586), rat (P35439), mouse (P35438), zebrafish. Other species not tested yet.
Specificity	Specific for GluN 1.
Remarks	**IP**: For most effective IP use the solubilization protocol described in this ELISA protocol. Consider that protein-protein interaction may be affected. **ICC**: For proteins of the post-synaptic density (PSD) para-formaldehyde fixation is not recommended. A methanol fixation is more suitable and gives better results; recommended protocol. 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. **ELISA**: Suitable as capture antibody for sandwich-ELISA with cat. no. 114 003 as detector antibody (protocol for sandwich-ELISA).

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

GluNs (NMDA-receptors) represent a class of glutamate receptors that are of central importance in synaptic plasticity. Multiple NMDA receptor subtypes exist: **GluN 1** and GluN 2 A-D. GluN 1 is the most important as it is required for activity. NMDA-receptors allow Ca^{2+} influx and are thought to trigger Ca^{2+} dependent postsynaptic processes involved in long term potentiation and depression.

Selected References SYSY Antibodies

Involvement of myosin Vb in glutamate receptor trafficking.
Lisé MF, Wong TP, Trinh A, Hines RM, Liu L, Kang R, Hines DJ, Lu J, Goldenring JR, Wang YT, El-Husseini A, et al.
The Journal of biological chemistry (2006) 281(6): 3669-78. **WB, ICC**

Anti-NMDA Receptor Encephalitis in the Polar Bear (Ursus maritimus) Knut.
Prüss H, Leubner J, Wenke NK, Czirják GÁ, Szentiks CA, Greenwood AD
Scientific reports (2015) 5: 12805. **ICC, IHC**

Chronic Stress Triggers Expression of Immediate Early Genes and Differentially Affects the Expression of AMPA and NMDA Subunits in Dorsal and Ventral Hippocampus of Rats.
Pacheco A, Aguayo FI, Aliaga E, Muñoz M, García-Rojo G, Olave FA, Parra-Fiedler NA, García-Pérez A, Tejos-Bravo M, Rojas PS, Parra CS, et al.
Frontiers in molecular neuroscience (2017) 10: 244. **WB, IHC; tested species: rat**

Fusion Competent Synaptic Vesicles Persist upon Active Zone Disruption and Loss of Vesicle Docking.
Wang SSH, Held RG, Wong MY, Liu C, Karakhanyan A, Kaeser PS
Neuron (2016) 91(4): 777-791. **WB, ICC**

Synapsin-dependent reserve pool of synaptic vesicles supports replenishment of the readily releasable pool under intense synaptic transmission.
Vasileva M, Horstmann H, Geumann C, Gitler D, Kuner T
The European journal of neuroscience (2012) 36(8): 3005-20. **ELISA**

Sustained calcium signalling and caspase-3 activation involve NMDA receptors in thymocytes in contact with dendritic cells.
Affaticati P, Mignen O, Jambou F, Potier MC, Klingel-Schmitt I, Degrouard J, Peineau S, Gouadon E, Collingridge GL, Liblau R, Capiod T, et al.
Cell death and differentiation (2011) 18(1): 99-108. **FACS**

The role of N-methyl-D-aspartate receptor subunits in the rat thalamic mediodorsal nucleus during central sensitization.
Kaneko M, Kaneko T, Kaneko R, Chokechanachaisakul U, Kawamura J, Sunakawa M, Okiji T, Suda H
Brain research (2011) 1371: 16-22. **IHC-P; 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. **WB; tested species: mouse**

Genetic Ablation of All Cerebellins Reveals Synapse Organizer Functions in Multiple Regions Throughout the Brain.
Seigneur E, Südhof TC
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) 38(20): 4774-4790. **WB; tested species: mouse**

SUMO1-conjugation is altered during normal aging but not by increased amyloid burden.
Stankova T, Piepkorn L, Bayer TA, Jahn O, Tirard M
Aging cell (2018) : e12760. **WB; tested species: mouse**

Hippocampal Memory Recovery After Acute Stress: A Behavioral, Morphological and Molecular Study.
Aguayo FI, Tejos-Bravo M, Díaz-Véliz G, Pacheco A, García-Rojo G, Corrales W, Olave FA, Aliaga E, Ulloa JL, Avalos AM, Román-Albasini L, et al.
Frontiers in molecular neuroscience (2018) 11: 283. **WB; tested species: rat**

Isolation of Synaptic Vesicles from Genetically Engineered Cultured Neurons.
McKenzie C, Spanova M, Johnson A, Kainrath S, Zheden V, Sitte HH, Janovjak H
Journal of neuroscience methods (2018) : . **WB; tested species: rat**

Autism-like behaviours and enhanced memory formation and synaptic plasticity in Lrfn2/SALM1-deficient mice.
Morimura N, Yasuda H, Yamaguchi K, Katayama KI, Hatayama M, Tomioka NH, Odagawa M, Kamiya A, Iwayama Y, Maekawa M, Nakamura K, et al.
Nature communications (2017) 8: 15800. **WB; tested species: mouse**

Transient oxytocin signaling primes the development and function of excitatory hippocampal neurons.
Ripamonti S, Ambrozkiewicz MC, Guzzi F, Gravati M, Biella G, Bormuth I, Hammer M, Tuffy LP, Sigler A, Kawabe H, Nishimori K, et al.
eLife (2017) 6: . **ICC; tested species: mouse**

Analysis of SUMO1-conjugation at synapses.
Daniel JA, Cooper BH, Palvimo JJ, Zhang FP, Brose N, Tirard M
eLife (2017) 6: . **WB; tested species: mouse**

Evidence for a role of glycoprotein M6a in dendritic spine formation and synaptogenesis.
Formoso K, Garcia MD, Frasch AC, Scorticati C
Molecular and cellular neurosciences (2016) 77: 95-104. **ICC; tested species: mouse**