### Data Sheet

<table>
<thead>
<tr>
<th>Reconstitution/Storage</th>
<th>100 µl antiserum, lyophilized. For reconstitution add 100 µl H₂O, then aliquot and store at -20°C until use.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applications</strong></td>
<td><strong>WB</strong>: 1 : 5000 (AP staining) <strong>IP</strong>: yes <strong>ICC</strong>: 1 : 1000 up to 1 : 5000 <strong>IHC</strong>: 1 : 500 up to 1 : 1000 <strong>IHC-P/FFPE</strong>: 1 : 200 <strong>EM</strong>: yes <strong>FACS</strong>: yes</td>
</tr>
<tr>
<td><strong>Immunogen</strong></td>
<td>Recombinant protein corresponding to AA 456 to 560 from rat VGLUT1 (UniProt Id: Q62634)</td>
</tr>
<tr>
<td><strong>Reactivity</strong></td>
<td>Reacts with: rat (Q62634), mouse (Q3TX4X), human (Q9P2U7), cow. Other species not tested yet.</td>
</tr>
<tr>
<td><strong>Specificity</strong></td>
<td>Specific for VGLUT 1. (K.O. verified)</td>
</tr>
<tr>
<td><strong>matching control</strong></td>
<td>135-3P</td>
</tr>
<tr>
<td><strong>Remarks</strong></td>
<td>VGLUT 1 aggregates after boiling, making it necessary to run SDS-PAGE only with non-boiled samples.</td>
</tr>
</tbody>
</table>

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

The vesicular glutamate transporter 1 (VGLUT 1) was originally identified as a brain specific phosphate transporter. Like the related VGLUT 2, VGLUT 1 is both necessary and sufficient for uptake and storage of glutamate and thus comprises the sole determinant for a glutamategic phenotype. Both VGLUTs are different from the plasma membrane transporters in that they are driven by a proton electrochemical gradient across the vesicle membrane.

VGLUT 1 and VGLUT 2 show complementary expression patterns. Together, they are currently the best markers for glutamategic nerve terminals and glutamategic synapses.

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**Selected References SYSY Antibodies**

Quantitative comparison of glutamategic and GABAergic synaptic vesicles unveils selectivity for few proteins including MAL2, a novel synaptic vesicle protein.


Expression of vesicular glutamate transporters VGLUT1 and VGLUT2 in the rat dental pulp and trigeminal ganglion following inflammation.

Yang ES, Jin MU, Hong JH, Kim YS, Choi SY, Kim TH, Cho YS, Bae YC


Critical role for piccolo in synaptic vesicle retrieval.

Ackermann F, Schink KO, Bruns C, Izzwák Z, Hamra FK, Rosenmund C, Garner CC

eLife (2019) B. **WB, ICC; tested species: rat**

Vesicular glutamate transporter 1 (VGLUT1)- and VGLUT2-immunopositive axon terminals on the rat jaw-closing and jaw-opening motoneurons.

Park SK, Ko SJ, Park SK, Rah JC, Lee KJ, Bae YC

Brain structure & function (2018) **IHC, EM; tested species: rat**

Expression of vesicular glutamate transporters in transient receptor potential ankyrin 1 (TRPA1)-positive neurons in the rat trigeminal ganglion.

Kim YS, Kim SK, Lee JS, Ko SJ, Bae YC

Brain research (2018) **WB, IHC; tested species: rat**

Blockade of adenosine A2A receptors recovers early deficits of memory and plasticity in the triple transgenic mouse model of Alzheimer’s disease.


Neurobiology of disease (2018) : **WB, ICC; tested species: mouse**

Inhibition of IL-6 trans-signaling in the brain increases sociability in the BTBR mouse model of autism.


Biochimica et biophysica acta (2016) 1862(10): 1918-25. **WB, IHC; tested species: mouse**

Reduced Glutamate Release in Adult BTBR Mouse Model of Autism Spectrum Disorder.


An essential role of acetylcholine-glutamate synergy at habenular synapses in nicotine dependence.


Nitrin-1 promotes excitatory synaptogenesis between cortical neurons by initiating synapse assembly.


Splice-specific roles of glycine receptor alpha1 in the hippocampus.


Critical Analysis of Particle Detection Artifacts in Synaptosome Flow Cytometry.

Hobson BD, Sims PA
eNeuro (2019) : **FACS; tested species: mouse**

Altered Glutamate Receptor Ionotropic Delta Subunit 2 Expression in Stau2-Deficient Cerebellar Purkinje Cells in the Adult Brain.

Pernice HF, Schieweck R, Jafari M, Straub T, Bilban M, Kiebler MA, Popper B

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