Specific for VGLUT 1. (K.O. verified)

VGLUT 1 aggregates after boiling, making it necessary to run SDS-PAGE only with non-boiled samples.

Reacts with: rat (Q62634), mouse (Q3TXX4), human (Q9P2U7), cow.

Recombinant protein corresponding to AA 456 to 560 from rat VGLUT1 (UniProt Id: Q62634) 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 glutamatergic phenotype. Both VGLUTs are different from the plasma membrane transporter identified as a brain specific phosphate transporter. Like the related VGLUT 2, VGLUT 1 is both non-toxic, not hazardous, not infectious, not contagious.

TO BE USED IN VITRO / FOR RESEARCH ONLY

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

Selected References SYSY Antibodies

Quantitative comparison of glutamatergic and GABAAergic 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

PloS one (2014) 9(10): e109723. WB, IHC

Critical role for piccolo in synaptic vesicle retrieval.


eLife (2019) B. WB, IHC; 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, IHC; tested species: mouse

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


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

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


Netrin-1 promotes excitatory synaptogenesis between cortical neurons by inhibiting synapse assembly.


Splice-specific roles of glycine receptor alpha3 in the hippocampus.


Critical Analysis of Particle Detection Artifacts in Synaptosome Flow Cytometry.

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

Structural adaption of axons during de- and remyelination in the Cuprizone mouse model.

Pfeiffer F, Frommer-Kaestle G, Fallier-Becker P

Brain pathology (Zurich, Switzerland) (2019) IHC; tested species: mouse

Short-term plasticity at cerebellar granule cell to molecular layer intermediate synapses expands information processing.

Dorgans K, Demais V, Bailly Y, Poulain B, Iose P, Droussou F
eLife (2019) IHC; tested species: mouse

Heterogeneity of GRIM-19 Expression in the Adult Mouse Brain.

Hwang SN, Kim JC, Kim SY

Cellular and molecular neurobiology (2019) IHC; tested species: mouse

Developmental Requirement of Homeoprotein Otx2 for Specific Habenulo-Interpeduncular Subcircuits.

Ruiz-Reig N, Rakotobe M, Bethus I, Le Menn G, Hudzik H, Marie H, Lamonerie T, D’Auberèx F


The vesicular glutamate transporter 1 VGLUT 1, also referred to as BNPI and SLC17A7, originaly 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 glutamatergic 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 glutamatergic nerve terminals and glutamatergic synapses.

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>Applications</td>
<td>WB: 1 : 5000 (AP staining) IP: yes</td>
</tr>
<tr>
<td></td>
<td>ICC: 1 : 1000 up to 1 : 5000 IHC: 1 : 500 up to 1 : 1000 IHC-P/FFPE: 1 : 200 EM: yes</td>
</tr>
<tr>
<td></td>
<td>FACS: yes</td>
</tr>
<tr>
<td>Immunogen</td>
<td>Recombinant protein corresponding to AA 456 to 560 from rat VGLUT1 (UniProt Id: Q62634)</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Reacts with: rat (Q62634), mouse (Q3TXX4), human (Q9P2U7), cow. Other species not tested yet.</td>
</tr>
<tr>
<td>Specificity</td>
<td>Specific for VGLUT 1. (K.O. verified)</td>
</tr>
<tr>
<td>matching control</td>
<td>135-3P</td>
</tr>
<tr>
<td>Remarks</td>
<td>VGLUT 1 aggregates after boiling, making it necessary to run SDS-PAGE only with non-boiled samples.</td>
</tr>
</tbody>
</table>