Synaptic Systems

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VGLUT 1

Cat.No. 135 311; 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 : 500 up to 1 : 2000 (AP staining) (see remarks) **IP**: yes (see remarks) **ICC**: 1 : 100 **IHC**: 1 : 100 **IHC-P/FFPE**: 1 : 100 up to 1 : 500 **ELISA**: yes (see remarks)
Clone	317D5
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to AA 456 to 560 from rat VGLUT1 (UniProt Id: Q62634)
Epitop	Epitop: AA 542 to 560 from rat VGLUT1 (UniProt Id: Q62634)
Reactivity	Reacts with: rat (Q62634), mouse (Q3TXX4). Other species not tested yet.
Specificity	Specific for VGLUT 1. (K.O. verified)
matching control	135-3P
Remarks	**WB**: This antibody yields stronger signals in Western blot experiments than cat. no. 135 511 but is less sensitive than cat. no. 135 011 and the polyclonal VGluT 1 antibodies. **IP**: Coupling to protein A is recommended for IP, since covalent coupling to activated sepharose leads to considerable loss of activity. **ELISA**: Suitable as capture antibody for sandwich-ELISA with cat. no. 135 303 as detector antibody (protocol for sandwich-ELISA). VGLUT 1 aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled samples.

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

The **v**esicular **glu**tamate **t**ransporter **1 VGLUT 1**, also referred to as **BNPI** and **SLC17A7**, 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 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.

Selected References SYSY Antibodies

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Journal of neurochemistry (2010) 113(1): 153-65. **EM, ICC, IP, WB**

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Tafoya LC, Mameli M, Miyashita T, Guzowski JF, Valenzuela CF, Wilson MC
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Vasileva M, Horstmann H, Geumann C, Gitler D, Kuner T
The European journal of neuroscience (2012) 36(8): 3005-20. **ELISA**

PTPσ Drives Excitatory Presynaptic Assembly via Various Extracellular and Intracellular Mechanisms.
Han KA, Ko JS, Pramanik G, Kim JY, Tabuchi K, Um JW, Ko J
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) 38(30): 6700-6721. **ICC; tested species: rat**

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Trepte P, Kruse S, Kostova S, Hoffmann S, Buntru A, Tempelmeier A, Secker C, Diez L, Schulz A, Klockmeier K, Zenkner M, et al.
Molecular systems biology (2018) 14(7): e8071. **ICC; tested species: mouse**

Aspects of excitatory/inhibitory synapses in multiple brain regions are correlated with levels of brain-derived neurotrophic factor/neurotrophin-3.
Shinoda Y, Sadakata T, Yagishita K, Kinameri E, Katoh-Semba R, Sano Y, Furuichi T
Biochemical and biophysical research communications (2018) : . **IHC; tested species: mouse**

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Sprenger HG, Wani G, Hesseling A, König T, Patron M, MacVicar T, Ahola S, Wai T, Barth E, Rugarli EI, Bergami M, et al.
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Richter K, Schmutz I, Darna M, Zander JF, Chavan R, Albrecht U, Ahnert-Hilger G
Neuroscience (2018) 371: 29-37. **WB; tested species: mouse**

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eLife (2017) 6: . **ICC; tested species: mouse**

Synaptic distribution of individually labeled mitral cells in the external plexiform layer of the mouse olfactory bulb.
Matsuno T, Kiyokage E, Toida K
The Journal of comparative neurology (2017) 525(7): 1633-1648. **IHC; tested species: mouse**

Growth Associated Protein 43 (GAP-43) as a Novel Target for the Diagnosis, Treatment and Prevention of Epileptogenesis.
Nemes AD, Ayasoufi K, Ying Z, Zhou QG, Suh H, Najm IM
Scientific reports (2017) 7(1): 17702. **IHC; tested species: rat**

Mass spectrometric analysis of synaptosomal membrane preparations for the determination of brain receptors, transporters and channels.
Sialana FJ, Gulyassy P, Májek P, Sjöstedt E, Kis V, Müller AC, Rudashevskaya EL, Mulder J, Bennett KL, Lubec G
Proteomics (2016) 16(22): 2911-2920. **WB**

Vesicular Synaptobrevin/VAMP2 Levels Guarded by AP180 Control Efficient Neurotransmission.
Koo SJ, Kochlamazashvili G, Rost B, Puchkov D, Gimber N, Lehmann M, Tadeus G, Schmoranzer J, Rosenmund C, Haucke V, Maritzen T, et al.
Neuron (2015) 88(2): 330-44. **WB; tested species: mouse**

Region-specific integration of embryonic stem cell-derived neuronal precursors into a pre-existing neuronal circuit.
Neuser F, Polack M, Annaheim C, Tucker KL, Korte M
PloS one (2013) 8(6): e66497. **IHC; tested species: mouse**