

## VGLUT 2

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Cat.No. 135 403; 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 up to 1 : 10000 (AP staining) (see remarks) <b>IP:</b> yes <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 250 up to 1 : 1000 <b>IHC-P/FFPE:</b> 1 : 500 <b>ELISA:</b> yes (see remarks)
Immunogen	Recombinant protein corresponding to AA 510 to 582 from rat VGLUT2 (UniProt Id: Q9JI12)
Reactivity	Reacts with: human (Q9P2U8), rat (Q9JI12), mouse (Q8BLE7), chicken. Other species not tested yet.
Specificity	Specific for VGLUT 2.
matching control	135-4P
Remarks	<b>WB:</b> VGLUT 2 aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled samples.  <b>ELISA:</b> Suitable as detector antibody for sandwich-ELISA with cat. no. 135 411 as capture antibody (protocol for sandwich-ELISA). This antibody is highly recommended as marker for glutamatergic nerve terminals and gives excellent results in ICC.

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

The vesicular glutamate transporter 2 **VGLUT 2**, also referred to as **DNPI** and **SLC17A6**, has a more restricted expression than the related VGLUT 1. Like VGLUT 1, it 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

An essential role for vesicular glutamate transporter 1 (VGLUT1) in postnatal development and control of quantal size. Wojcik SM, Rhee JS, Herzog E, Sigler A, Jahn R, Takamori S, Brose N, Rosenmund C. Proceedings of the National Academy of Sciences of the United States of America (2004) 101(18): 7158-63. **ICC, WB, IHC; tested species: mouse**

Synaptic and vesicular co-localization of the glutamate transporters VGLUT1 and VGLUT2 in the mouse hippocampus. Herzog E, Takamori S, Jahn R, Brose N, Wojcik SM. Journal of neurochemistry (2006) 99(3): 1011-8. **IHC, IP, WB; tested species: mouse**

Target-derived matricryptins organize cerebellar synapse formation through α3β1 integrins. Su J, Stenbjörn RS, Gorse K, Su K, Hauser KF, Ricard-Blum S, Pihlajaniemi T, Fox MA. Cell reports (2012) 2(2): 223-30. **WB, ICC, IHC; tested species: mouse**

Transient synaptic zinc-positive thalamocortical terminals in the developing barrel cortex. Ichinohe N, Potapov D, Rockland KS. The European journal of neuroscience (2006) 24(4): 1001-10. **IHC, EM; tested species: rat**

Vesicular glutamate transporters play a role in neuronal differentiation of cultured SVZ-derived neural precursor cells. Sánchez-Mendoza EH, Bellver-Landete V, Arce C, Doeppner TR, Hermann DM, Oset-Gasque MJ. PloS one (2017) 12(5): e0177069. **WB, ICC**

Elevated mutant dynorphin A causes Purkinje cell loss and motor dysfunction in spinocerebellar ataxia type 23. Smeets CJ, Jezierska J, Watanabe H, Duarri A, Fokkens MR, Meijer M, Zhou Q, Yakovleva T, Boddeke E, den Dunnen W, van Deursen J, et al. Brain : a journal of neurology (2015) 138(Pt 9): 2537-52. **WB, IHC**

Cerebellar synaptogenesis is compromised in mouse models of DYT1 dystonia. Vanni V, Puglisi F, Bonsi P, Ponterio G, Maltese M, Pisani A, Mandolesi G. Experimental neurology (2015) 271: 457-67. **WB, IHC; tested species: mouse**

Distribution of SNAP25, VAMP1 and VAMP2 in mature and developing deep cerebellar nuclei after estrogen administration. Manca P, Mameli O, Caria MA, Torrejón-Escribano B, Blasi J. Neuroscience (2014) 266: 102-15. **IHC, WB**

Transient focal cerebral ischemia significantly alters not only EAATs but also VGLUTs expression in rats: relevance of changes in reactive astroglia. Sánchez-Mendoza E, Burguete MC, Castelló-Ruiz M, González MP, Roncero C, Salom JB, Arce C, Cañadas S, Torregrosa G, Alborch E, Oset-Gasque MJ, et al. Journal of neurochemistry (2010) 113(5): 1343-55. **IHC, WB; tested species: rat**

Carbonic anhydrase related protein 8 mutation results in aberrant synaptic morphology and excitatory synaptic function in the cerebellum. Hirasawa M, Xu X, Trask RB, Maddatu TP, Johnson BA, Naggert JK, Nishina PM, Ikeda A. Molecular and cellular neurosciences (2007) 35(1): 161-70. **IHC-P; tested species: mouse**

Puncta of neuronal nitric oxide synthase (nNOS) mediate NMDA-receptor signalling in the auditory midbrain. Olthof BM, Gartside SE, Rees A. The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) : . **IHC**

Integrity of Cajal-Retzius cells in the reeler-mouse hippocampus. Anstötz M, Karsak M, Rune GM. Hippocampus (2018) : . **IHC; tested species: mouse**

Architecture of the Mouse Brain Synaptome. Zhu F, Cizeron M, Qiu Z, Benavides-Piccione R, Kopanitsa MV, Skene NG, Koniaris B, DeFelipe J, Fransén E, Komiyama NH, Grant SGN, et al. Neuron (2018) : . **IHC; tested species: mouse**

Genetically Engineered iPSC-Derived FTDP-17 MAPT Neurons Display Mutation-Specific Neurodegenerative and Neurodevelopmental Phenotypes. Verheyen A, Diels A, Reumers J, Van Hoorde K, Van den Wyngaert I, van Outryve d'Ydewalle C, De Bondt A, Kuijlaars J, De Muynck L, De Hoogt R, Bretteville A, et al. Stem cell reports (2018) : . **ICC; tested species: human**

Neurologin 1, 2, and 3 Regulation at the Synapse: FMRP-Dependent Translation and Activity-Induced Proteolytic Cleavage. Chmielewska JJ, Kuzniewska B, Milek J, Urbanska K, Dziembowska M. Molecular neurobiology (2018) : . **WB; tested species: mouse**

Botulinum Neurotoxin Application to the Severed Femoral Nerve Modulates Spinal Synaptic Responses to Axotomy and Enhances Motor Recovery in Rats. Irintchev M, Guntinas-Lichius O, Irintchev A. Neural plasticity (2018) 2018: 7975013. **IHC; tested species: rat**