

VGLUT 2

Cat.No. 135 411; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Azide was added before lyophilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: not recommended IHC: not recommended IHC-P/FFPE: not tested yet ELISA: yes (see remarks)
Clone	321A8
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to AA 510 to 582 from rat VGLUT2 (UniProt Id: Q9JI12)
Epitop	Epitop: AA 564 to 582 from rat VGLUT2 (UniProt Id: Q9JI12)
Reactivity	Reacts with: rat (Q9JI12). No signal: chicken. Other species not tested yet.
Specificity	Specific for VGLUT 2.
matching control	135-4P
Remarks	ELISA: Suitable as capture antibody for sandwich-ELISA with cat. no. 135 403 as detector antibody (protocol for sandwich-ELISA). VGLUT 2 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 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 SY SY Antibodies

Carnosic acid improves outcome after repetitive mild traumatic brain injury.
Maynard ME, Underwood EL, Redell JB, Zhao J, Kobori N, Hood KN, Moore AN, Dash PK
Journal of neurotrauma (2019) : . **IHC; tested species: mouse**

Human Striatal Dopaminergic and Regional Serotonergic Synaptic Degeneration with Lewy Body Disease and Inheritance of APOE ε4.
Postupna N, Latimer CS, Larson EB, Sherfield E, Paladin J, Shively CA, Jorgensen MJ, Andrews RN, Kaplan JR, Crane PK, Montine KS, et al.
The American journal of pathology (2017) 187(4): 884-895. **FACS; tested species: human**

Synaptic and vesicular coexistence of VGLUT and VGAT in selected excitatory and inhibitory synapses.
Zander JF, Münster-Wandowski A, Brunk I, Pahner I, Gómez-Lira G, Heinemann U, Gutiérrez R, Laube G, Ahnert-Hilger G
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 30(22): 7634-45. **IP**

Differential sorting of the vesicular glutamate transporter 1 into a defined vesicular pool is regulated by light signaling involving the clock gene Period2.
Yelamanchili SV, Pendyala G, Brunk I, Darna M, Albrecht U, Ahnert-Hilger G
The Journal of biological chemistry (2006) 281(23): 15671-9. **WB; tested species: mouse**

A sandwich enzyme-linked immunosorbent assay for the quantification of insoluble membrane and scaffold proteins.
Geumann C, Grønborg M, Hellwig M, Martens H, Jahn R
Analytical biochemistry (2010) 402(2): 161-9. **IP**

Selected General References

Identification of differentiation-associated brain-specific phosphate transporter as a second vesicular glutamate transporter (VGLUT2).
Takamori S, Rhee JS, Rosenmund C, Jahn R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2001) 21(22): RC182.

The expression of vesicular glutamate transporters defines two classes of excitatory synapse.
Fremeau RT, Troyer MD, Pahner I, Nygaard GO, Tran CH, Reimer RJ, Bellocchio EE, Fortin D, Storm-Mathisen J, Edwards RH
Neuron (2001) 31(2): 247-60.

Immunocytochemical localization of candidates for vesicular glutamate transporters in the rat cerebral cortex.
Fujiyama F, Furuta T, Kaneko T
The Journal of comparative neurology (2001) 435(3): 379-87.

Molecular cloning of a novel brain-type Na(+) -dependent inorganic phosphate cotransporter.
Aihara Y, Mashima H, Onda H, Hisano S, Kasuya H, Hori T, Yamada S, Tomura H, Yamada Y, Inoue I, Kojima I, et al.
Journal of neurochemistry (2000) 74(6): 2622-5.