Synaptic Systems

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VGLUT 1

Cat.No. N1602-SC3-S; Single Domain alpaca antibody, 20 µl FluoTag-X2

Data Sheet

Reconstitution/ Storage	20µl 5µM camelid sdAB in buffered saline, 50% glycerol, 0.09% sodium azide
Applications	**WB**: not recommended **IP**: N/A **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P/FFPE**: not tested yet
Label	Sulfo-Cyanine 3, two fluorophores coupled to one FluoTag
Clone	Nb9
Subtype	single domain
Immunogen	Recombinant protein corresponding to AA 58 to 515 from rat VGLUT1 (UniProt Id: Q62634)
Epitop	Epitop: AA 58 to 515 from rat VGLUT1 (UniProt Id: Q62634)
Reactivity	Reacts with: rat (Q62634), mouse (Q3TXX4). Other species not tested yet.
Specificity	Specific for VGLUT 1

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.

In **FluoTag-X** two fluorophore molecules are site-specifically coupled to each FluoTag molecule. Owing to the small size of the FluoTags, the distance between the target epitope and each fluorophore is below 4 nm.
In comparison to detection systems using conventional antibodies, FluoTag-X can thus improve the localization accuracy by 10-15 nm. Both features - superior brightness and precise fluorophore placement - render the FluoTag-X products excellent tools for all microscopy techniques.

Selected References SYSY Antibodies

Generation and Characterization of Anti-VGLUT Nanobodies Acting as Inhibitors of Transport.
Schenck S, Kunz L, Sahlender D, Pardon E, Geertsma ER, Savtchouk I, Suzuki T, Neldner Y, Štefanić S, Steyaert J, Volterra A, et al.
Biochemistry (2017) 56(30): 3962-3971. **ICC; tested species: mouse**

Selected General References

Identification of a vesicular glutamate transporter that defines a glutamatergic phenotype in neurons.
Takamori S, Rhee JS, Rosenmund C, Jahn R
Nature (2000) 407(6801): 189-94.

Uptake of glutamate into synaptic vesicles by an inorganic phosphate transporter.
Bellocchio EE, Reimer RJ, Fremeau RT, Edwards RH
Science (New York, N.Y.) (2000) 289(5481): 957-60.

The localization of the brain-specific inorganic phosphate transporter suggests a specific presynaptic role in glutamatergic transmission.
Bellocchio EE, Hu H, Pohorille A, Chan J, Pickel VM, Edwards RH
The Journal of neuroscience : the official journal of the Society for Neuroscience (1998) 18(21): 8648-59.

Cloning and expression of a cDNA encoding a brain-specific Na(+)-dependent inorganic phosphate cotransporter.
Ni B, Rosteck PR, Nadi NS, Paul SM
Proceedings of the National Academy of Sciences of the United States of America (1994) 91(12): 5607-11.