SY SY Synaptic Systems

Rudolf-Wissell-Str. 28 37079 Göttingen, Germany Phone: +49 551-50556-0 Fax: +49 551-50556-384 E-mail: sales@sysy.com Web: www.sysy.com

VGAT cytoplasmic domain

Cat.No. 131 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 μl antiserum, lyophilized. For reconstitution add 100 μl H_2O , then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 up to 1 : 2000 (AP staining) IP: not tested yet ICC: 1 : 500 up to 1 : 1000 IHC: 1 : 200 up to 1 : 500 IHC-P/FFPE: yes EM: yes
Immunogen	Recombinant protein corresponding to AA 2 to 115 from rat VGAT (UniProt Id: O35458)
Reactivity	Reacts with: rat (O35458), mouse (O35633), zebrafish, ape. Other species not tested yet.
Specificity	Specific for VGAT. (K.O. verified)
matching control	131-0GP
Remarks	VGAT aggregates after boiling, making it necessary to run SDS-PAGE only with non- boiled samples.

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

The vesicular GABA transporter VGAT is responsible for uptake and storage of GABA and glycine by synaptic vesicles in the central nervous system. For this reason it is frequently referred to as the v esicular inhibitory aminoacid transporter VIAAT. It is different from the plasma membrane transporters in that it is driven by a proton electrochemical gradient across the vesicle membrane. So far, only one isoform is known. VGAT is currently the best marker for inhibitory nerve terminals.

Selected References SYSY Antibodies

Quantitative comparison of glutamatergic and GABAergic synaptic vesicles unveils selectivity for few proteins including MAL2, a novel synaptic vesicle protein.

Grønborg M, Pavlos NJ, Brunk I, Chua JJ, Münster-Wandowski A, Riedel D, Ahnert-Hilger G, Urlaub H, Jahn R The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 30(1): 2-12. **ICC, IHC, EM**

Development of dissociated cryopreserved rat cortical neurons in vitro. Schock SC, Jolin-Dahel KS, Schock PC, Theiss S, Arbuthnott GW, Garcia-Munoz M, Staines WA Journal of neuroscience methods (2012) 205(2): 324-33. **WB, IHC**

Expression of Neurofilament Subunits at Neocortical Glutamatergic and GABAergic Synapses. Bragina L, Conti F Frontiers in neuroanatomy (2018) 12: 74. **WB, IHC; tested species: rat**

Mixed inhibitory synaptic balance correlates with glutamatergic synaptic phenotype in cerebellar unipolar brush cells. Rousseau CV, Dugué GP, Dumoulin A, Mugnaini E, Dieudonné S, Diana MA

The Journal of neuroscience : the official journal of the Society for Neuroscience (2012) 32(13): 4632-44. IHC-P; tested species: rat

Axo-axonic Innervation of Neocortical Pyramidal Neurons by GABAergic Chandelier Cells Requires AnkyrinG-Associated L1CAM. Tai Y, Gallo NB, Wang M, Yu JR, Van Aelst L

Neuron (2019):. IHC; tested species: mouse

Neuronal Regulation of Fast Synaptotagmin Isoforms Controls the Relative Contributions of Synchronous and Asynchronous Release.

Turecek J, Regehr WG

Neuron (2019) : . IHC; tested species: mouse

The basal interstitial nucleus (BIN) of the cerebellum provides diffuse ascending inhibitory input to the floccular granule cell layer.

Jaarsma D, Blot FGC, Wu B, Venkatesan S, Voogd J, Meijer D, Ruigrok TJH, Gao Z, Schonewille M, De Zeeuw CI The Journal of comparative neurology (2018) : . **IHC; tested species: mouse**

VIP-immunoreactive interneurons within circuits of the mouse basolateral amygdala. Rhomberg T, Rovira-Esteban L, Vikór A, Paradiso E, Kremser C, Nagy-Pál P, Papp OI, Tasan R, Erdélyi F, Szabó G, Ferraguti F, et al. The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) : . **IHC; tested species: mouse**

Specific synaptic input strengths determine the computational properties of excitation - inhibition integration in a sound localization circuit.

Gjoni E, Zenke F, Bouhours B, Schneggenburger R The Journal of physiology (2018) : . **IHC; tested species: mouse**

Hapln4/Bral2 is a selective regulator for formation and transmission of GABAergic synapses between Purkinje and deep cerebellar nuclei neurons.

Edamatsu M, Miyano R, Fujikawa A, Fujii F, Hori T, Sakaba T, Oohashi T Journal of neurochemistry (2018) : . **IHC; tested species: mouse**

A unique intracellular tyrosine in neuroligin-1 regulates AMPA receptor recruitment during synapse differentiation and potentiation.

Letellier M, Szíber Z, Chamma I, Saphy C, Papasideri I, Tessier B, Sainlos M, Czöndör K, Thoumine O Nature communications (2018) 9(1): 3979. ICC; tested species: rat

HIV Tat causes synapse loss in a mouse model of HIV-associated neurocognitive disorder that is independent of the classical complement cascade component C1q.

Hammond JW, Qiu WQ, Marker DF, Chamberlain JM, Greaves-Tunnell W, Bellizzi MJ, Lu SM, Gelbard HA Glia (2018) : . **WB; tested species: mouse**

GABAergic deficits and schizophrenia-like behaviors in a mouse model carrying patient-derived neuroligin-2 R215H mutation. Jiang DY, Wu Z, Forsyth CT, Hu Y, Yee SP, Chen G

Molecular brain (2018) 11(1): 31. IHC; tested species: mouse

GABAergic inhibition in dual-transmission cholinergic and GABAergic striatal interneurons is abolished in Parkinson disease. Lozovaya N, Eftekhari S, Cloarec R, Gouty-Colomer LA, Dufour A, Riffault B, Billon-Grand M, Pons-Bennaceur A, Oumar N, Burnashev N, Ben-Ari Y, et al.

Nature communications (2018) 9(1): 1422. IHC; tested species: mouse

Clptm1 Limits Forward Trafficking of GABAA Receptors to Scale Inhibitory Synaptic Strength. Ge Y, Kang Y, Cassidy RM, Moon KM, Lewis R, Wong ROL, Foster LJ, Craig AM Neuron (2018) 97(3): 596-610.e8. **ICC; tested species: mouse**

Loss of the mitochondrial i-AAA protease YME1L leads to ocular dysfunction and spinal axonopathy. Sprenger HG, Wani G, Hesseling A, König T, Patron M, MacVicar T, Ahola S, Wai T, Barth E, Rugarli EI, Bergami M, et al. EMBO molecular medicine (2018) : . **ICC; tested species: mouse**