

## VGAT cytoplasmic domain

Cat.No. 131 003; 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 : 5000 (AP staining) (see remarks) <b>IP:</b> yes <b>ICC:</b> 1 : 100 up to 1 : 1000 <b>IHC:</b> 1 : 500 up to 1 : 3000 <b>IHC-P/FFPE:</b> not tested yet <b>EM:</b> yes
Immunogen	Synthetic peptide corresponding to AA 75 to 87 from rat VGAT (UniProt Id: O35458)
Reactivity	Reacts with: human (Q9H598), rat (O35458), mouse (O35633), monkey. Other species not tested yet.
Specificity	Specific for VGAT. (K.O. verified)
matching control	131-0P
Remarks	<b>WB:</b> 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 vesicular inhibitory amino acid 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

Unique luminal localization of VGAT-C terminus allows for selective labeling of active cortical GABAergic synapses. Martens H, Weston MC, Boulland JL, Grønborg M, Grosche J, Kacza J, Hoffmann A, Matteoli M, Takamori S, Harkany T, Chaudhry FA, et al. The Journal of neuroscience : the official journal of the Society for Neuroscience (2008) 28(49): 13125-31. **WB, ICC, IHC; KO verified; tested species: rat**

Distribution of gephyrin-immunoreactivity in the trigeminal motor nucleus: an immunohistochemical study in rats. Li Z, Ge S, Zhang F, Zhang T, Mizuno N, Hioki H, Kaneko T, Gao G, Li J Anatomical record (Hoboken, N.J. : 2007) (2012) 295(4): 641-51. **IHC, EM; tested species: rat**

Autism and Schizophrenia-Associated CYFIP1 Regulates the Balance of Synaptic Excitation and Inhibition. Davenport EC, Szulc BR, Drew J, Taylor J, Morgan T, Higgs NF, López-Doménech G, Kittler JT Cell reports (2019) 26(8): 2037-2051.e6. **ICC, IHC; tested species: mouse**

Genetic Ablation of All Cerebellins Reveals Synapse Organizer Functions in Multiple Regions Throughout the Brain. Seigneur E, Südhof TC The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) 38(20): 4774-4790. **WB, IHC; tested species: mouse**

Aberrant neuronal activity-induced signaling and gene expression in a mouse model of RASopathy. Altmüller F, Pothula S, Annamneedi A, Nakhaei-Rad S, Montenegro-Venegas C, Pina-Fernández E, Marini C, Santos M, Schanze D, Montag D, Ahmadian MR, et al. PLoS genetics (2017) 13(3): e1006684. **ICC, IHC**

IgSF21 promotes differentiation of inhibitory synapses via binding to neurexin2a. Tanabe Y, Naito Y, Vasuta C, Lee AK, Soumounou Y, Linhoff MW, Takahashi H Nature communications (2017) 8(1): 408. **WB, IHC**

Assembly of Excitatory Synapses in the Absence of Glutamatergic Neurotransmission. Sando R, Bushong E, Zhu Y, Huang M, Considine C, Phan S, Ju S, Uytiepo M, Ellisman M, Maximov A Neuron (2017) 94(2): 312-321.e3. **WB, IHC; tested species: mouse**

Distinct mechanisms regulate GABAA receptor and gephyrin clustering at perisomatic and axo-axonic synapses on CA1 pyramidal cells. Panzanelli P, Gunn BG, Schlatter MC, Benke D, Tyagarajan SK, Scheiffele P, Bellelli D, Lambert JJ, Rudolph U, Fritschy JM The Journal of physiology (2011) 589(Pt 20): 4959-80. **IHC, EM; tested species: mouse**

Cleavage of the vesicular GABA transporter under excitotoxic conditions is followed by accumulation of the truncated transporter in nonsynaptic sites. Gomes JR, Lobo AC, Melo CV, Inácio AR, Takano J, Iwata N, Saido TC, de Almeida LP, Wieloch T, Duarte CB The Journal of neuroscience : the official journal of the Society for Neuroscience (2011) 31(12): 4622-35. **WB, ICC; tested species: rat**

Splice-specific roles of glycine receptor alpha3 in the hippocampus. Eichler SA, Förstera B, Smolinsky B, Jüttner N, Lehmann TN, Fählng M, Schwarz G, Legendre P, Meier JC The European journal of neuroscience (2009) 30(6): 1077-91. **ICC, IHC; tested species: mouse**

Inositol polyphosphate multikinase mediates extinction of fear memory. Park J, Longo F, Park SJ, Lee S, Bae M, Tyagi R, Han JH, Kim S, Santini E, Klann E, Snyder SH, et al. Proceedings of the National Academy of Sciences of the United States of America (2019) : . **IHC; tested species: mouse**

Dysregulated protocadherin-pathway activity as an intrinsic defect in induced pluripotent stem cell-derived cortical interneurons from subjects with schizophrenia. Shao Z, Noh H, Bin Kim W, Ni P, Nguyen C, Cote SE, Noyes E, Zhao J, Parsons T, Park JM, Zheng K, et al. Nature neuroscience (2019) : . **IHC; tested species: human, mouse**

A triheptanoin-supplemented diet rescues hippocampal hyperexcitability and seizure susceptibility in FoxG1+/- mice. Testa G, Mainardi M, Olimpico F, Pancrazi L, Cattaneo A, Caleo M, Costa M Neuropharmacology (2019) : . **WB; tested species: mouse**

Ontogeny and reversal of brain circuit abnormalities in a preclinical model of PCOS. Silva MS, Prescott M, Campbell RE JCI insight (2018) 3(7): . **IHC; tested species: mouse**

Ventromedial medulla inhibitory neuron inactivation induces REM sleep without atonia and REM sleep behavior disorder. Valencia Garcia S, Brischoux F, Clément O, Libourel PA, Arthaud S, Lazarus M, Luppi PH, Fort P Nature communications (2018) 9(1): 504. **IHC; tested species: rat**

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**