

## VACHT

Cat.No. 139 103; 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 : 100 up to 1 : 1000 (AP staining) (see remarks) <b>IP:</b> yes <b>ICC:</b> 1 : 500 up to 1 : 10000 <b>IHC:</b> 1 : 100 up to 1 : 1000 <b>IHC-P/FFPE:</b> 1 : 500
Immunogen	Recombinant protein corresponding to AA 475 to 530 from rat VACHT (UniProt Id: Q62666)
Reactivity	Reacts with: human (Q16572), rat (Q62666), mouse (O35304), pig. Other species not tested yet.
Specificity	Specific for VACHT. (K.O. verified)
matching control	139-1P
Remarks	This antibody detects the glycosylated and unglycosylated protein and is an excellent marker for cholinergic axons.  <b>WB:</b> VACHT 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 acetylcholine transporter **VACHT** is an integral membrane protein with 12 putative trans-membrane domains. VACHT and choline acetyltransferase (ChAT) are encoded by genes organized in a single gene locus, and coregulation of the two genes has been reported several times. VACHT translocates acetylcholine from the cytoplasm into synaptic vesicles where it stays until release. After release from the presynaptic nerve terminal acetylcholine is hydrolyzed by acetylcholine esterase. During Alzheimer's disease acetylcholine is one of the first neurotransmitters to be reduced.

## Selected References SYSY Antibodies

Novel strains of mice deficient for the vesicular acetylcholine transporter: insights on transcriptional regulation and control of locomotor behavior.

Martins-Silva C, De Jaeger X, Guzman MS, Lima RD, Santos MS, Kushmerick C, Gomez MV, Caron MG, Prado MA, Prado VF PLoS one (2011) 6(3): e17611. **WB, IHC; tested species: mouse**

Selective decrease of cholinergic signaling from pedunculo pontine and laterodorsal tegmental nuclei has little impact on cognition but markedly increases susceptibility to stress.

Janickova H, Kljakic O, Rosborough K, Raulic S, Matovic S, Gros R, Saksida LM, Bussey TJ, Inoue W, Prado VF, Prado MAM, et al. FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2019) : fj201802108R. **WB, IHC; KD verified; tested species: mouse**

Cholinergic innervation of principal neurons in the cochlear nucleus of the Mongolian gerbil.

Gillet C, Goyer D, Kurth S, Griebel H, Kuenzel T The Journal of comparative neurology (2018) 526(10): 1647-1661. **WB, IHC**

Cardiac acetylcholine inhibits ventricular remodeling and dysfunction under pathologic conditions.

Roy A, Dakroub M, Tezini GC, Liu Y, Guatimosim S, Feng Q, Salgado HC, Prado VF, Prado MA, Gros R FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2016) 30(2): 688-701. **WB, IHC**

An essential role of acetylcholine-glutamate synergy at habenular synapses in nicotine dependence.

Frahm S, Antolin-Fontes B, Görllich A, Zander JF, Ahnert-Hilger G, Ibañez-Tallon I eLife (2015) 4: e11396. **WB, IHC**

Minimal Change in the cytoplasmic calcium dynamics in striatal GABAergic neurons of a DYT1 dystonia knock-in mouse model.

Iwabuchi S, Koh JY, Wang K, Ho KW, Harata NC PLoS one (2013) 8(11): e80793. **ICC; tested species: mouse**

Remodeling of cholinergic input to the hippocampus after noise exposure and tinnitus induction in guinea pigs.

Zhang L, Wu C, Martel DT, West M, Sutton MA, Shore SE Hippocampus (2018) : . **IHC**

VEGF-A and VEGF-B Coordinate the Arteriogenesis to Repair the Infarcted Heart with Vagus Nerve Stimulation.

Lv YX, Zhong S, Tang H, Luo B, Chen SJ, Chen L, Zheng F, Zhang L, Wang L, Li XY, Yan YW, et al. Cellular physiology and biochemistry : international journal of experimental cellular physiology, biochemistry, and pharmacology (2018) 48(2): 433-449. **IHC; tested species: rat**

Paracrine Interactions within the Pancreatic Islet Determine the Glycemic Set Point.

Rodriguez-Diaz R, Molano RD, Weitz JR, Abdulreda MH, Berman DM, Leibiger B, Leibiger IB, Kenyon NS, Ricordi C, Pileggi A, Caicedo A, et al. Cell metabolism (2018) 27(3): 549-558.e4. **IHC; tested species: human, mouse**

Precisely Timed Nicotinic Activation Drives SST Inhibition in Neocortical Circuits.

Urban-Ciecko J, Jouhannau JS, Myal SE, Poulet JFA, Barth AL Neuron (2018) 97(3): 611-625.e5. **IHC; tested species: mouse**

Differential deregulation of NGF and BDNF neurotrophins in a transgenic rat model of Alzheimer's disease.

Iulita MF, Bistué Millón MB, Pentz R, Aguilar LF, Do Carmo S, Allard S, Michalski B, Wilson EN, Ducatenzeiler A, Bruno MA, Fahnestock M, et al. Neurobiology of disease (2017) 108: 307-323. **IHC; tested species: rat**

Neurturin and a GLP-1 Analogue Act Synergistically to Alleviate Diabetes in Zucker Diabetic Fatty Rats.

Trevaskis JL, Sacramento CB, Jouiha H, Ali S, Le Lay J, Oldham S, Bhagroo N, Boland BB, Cann J, Chang Y, O'Day T, et al. Diabetes (2017) 66(7): 2007-2018. **IHC; tested species: rat**

Layer- and cell type-selective co-transmission by a basal forebrain cholinergic projection to the olfactory bulb.

Case DT, Burton SD, Gedeon JY, Williams SG, Urban NN, Seal RP Nature communications (2017) 8(1): 652. **IHC; tested species: mouse**

Deletion of the vesicular acetylcholine transporter from pedunculo pontine/laterodorsal tegmental neurons modifies gait.

Janickova H, Rosborough K, Al-Onaizi M, Kljakic O, Guzman MS, Gros R, Prado MA, Prado VF Journal of neurochemistry (2017) 140(5): 787-798. **WB; tested species: mouse**

Loss of Neuroligin3 specifically downregulates retinal GABAA<sub>2</sub> receptors without abolishing direction selectivity.

Hoon M, Krishnamoorthy V, Gollisch T, Falkenburger B, Varoqueaux F PLoS one (2017) 12(7): e0181011. **IHC; tested species: mouse**

Smn-Deficiency Increases the Intrinsic Excitability of Motoneurons.

Arumugam S, Garcera A, Soler RM, Tabares L Frontiers in cellular neuroscience (2017) 11: 269. **ICC; tested species: mouse**

Loss of Sympathetic Nerves in Spleens from Patients with End Stage Sepsis.

Hoover DB, Brown TC, Miller MK, Schweitzer JB, Williams DL Frontiers in immunology (2017) 8: 1712. **IHC; tested species: human**